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DIMETRODON

Sail-backed *Dimetrodon* was as long as a modern hippopotamus and heavier than a tiger.

Dimetrodon had the varied teeth of a mammal, and the scaly skin of a reptile. It belonged to the group of mammal-like reptiles that were the ancestors of true mammals. *Dimetrodon* was a pelycosaur (sail-shaped reptile), a type of animal that appeared about 280 million years ago and died out 30 million years later. It lived before the dinosaurs.

MEAL MACHINE

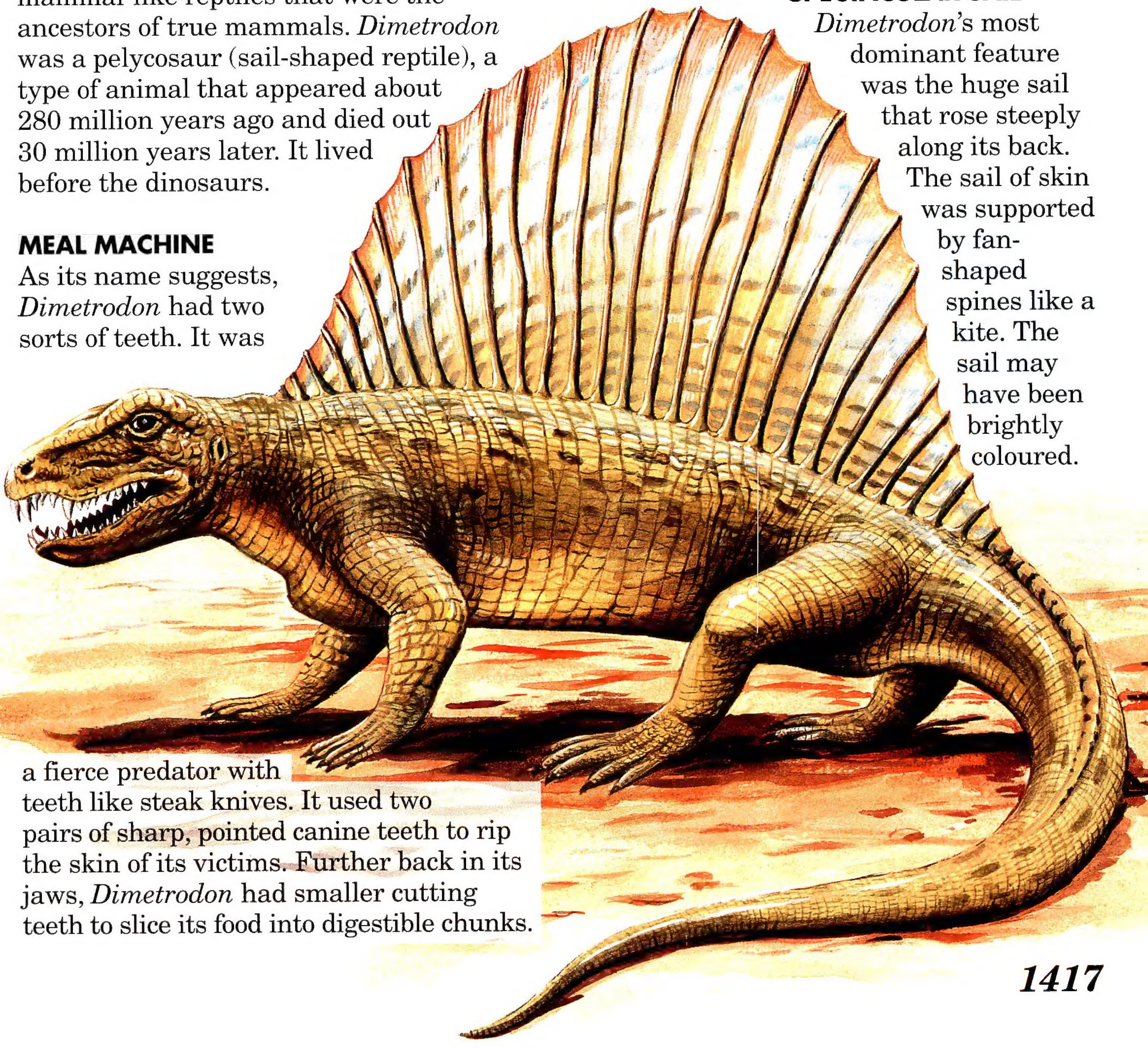
As its name suggests, *Dimetrodon* had two sorts of teeth. It was a fierce predator with teeth like steak knives. It used two pairs of sharp, pointed canine teeth to rip the skin of its victims. Further back in its jaws, *Dimetrodon* had smaller cutting teeth to slice its food into digestible chunks.

OPEN WIDE!

With its jaws closed, *Dimetrodon* almost looked as if it was grinning. But when it opened its powerful jaws and showed its wide, gaping mouth, its appearance was far from friendly. Because its jaws were so huge, *Dimetrodon* was probably capable of eating animals of its own size.

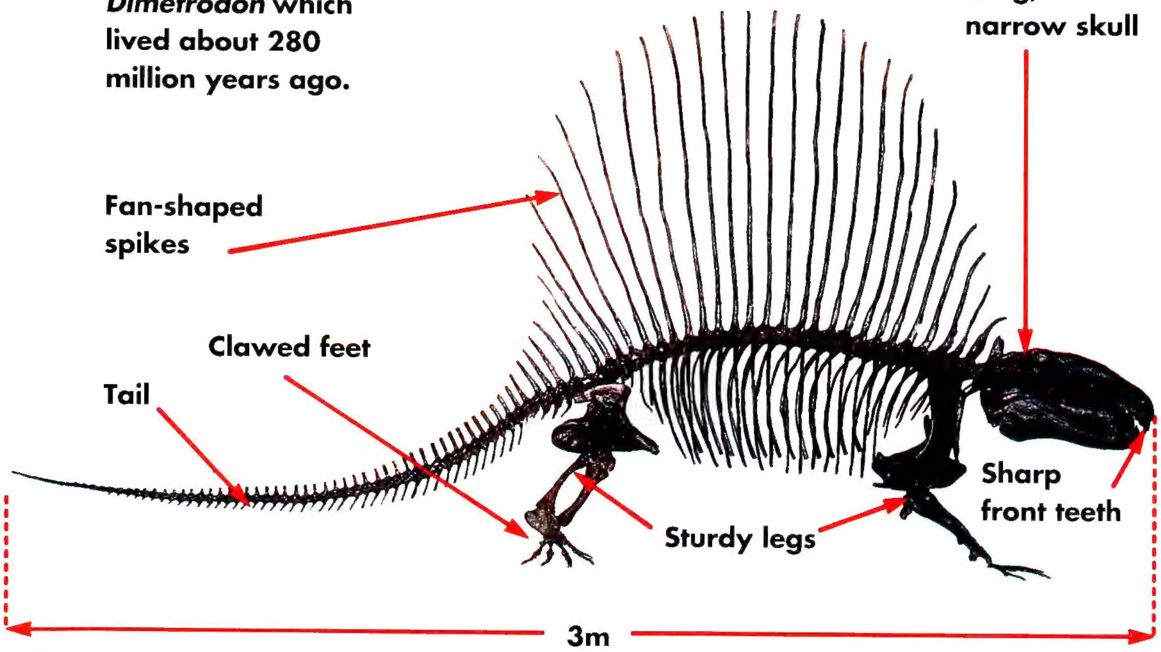
SPECTACULAR SAIL

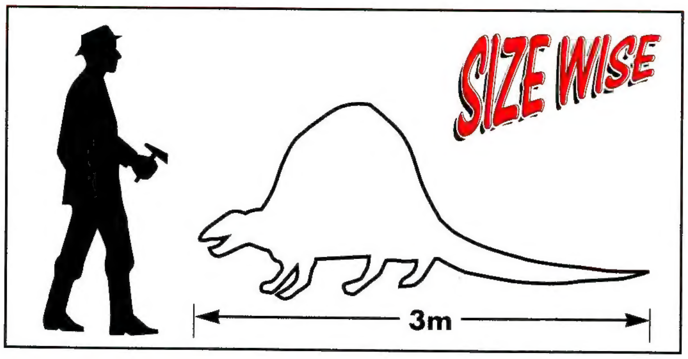
Dimetrodon's most dominant feature was the huge sail that rose steeply along its back. The sail of skin was supported by fan-shaped spines like a kite. The sail may have been brightly coloured.



IDENTIKIT

The skeleton of the sail-shaped *Dimetrodon* which lived about 280 million years ago.





IT'S A FACT

HOTTING UP

Dimetrodon's sail meant that its body temperature rose in half the time that it took a sail-less creature to get warm. Experts have worked out that an average-sized animal could raise its body heat by 8°C in two hours. A reptile without a sail needed double the amount of time to reach the same temperature.

EARLY MOVER

Experts think that *Dimetrodon's* sail helped it to be an efficient hunter. Athletes know how important it is to 'warm up' before a race. When a body is cold, it moves more slowly. As it stood in the warmth of the morning sun, *Dimetrodon's* sail absorbed the heat and its body temperature rose. This meant that *Dimetrodon* was active earlier than its cold-blooded, slow-moving prey.

CHILL OUT

Dimetrodon also cooled down quickly by moving to a shady spot where its sail gave out excess heat. This ability to control its body temperature quickly was a great advantage. It was like having a radiator built into its body.

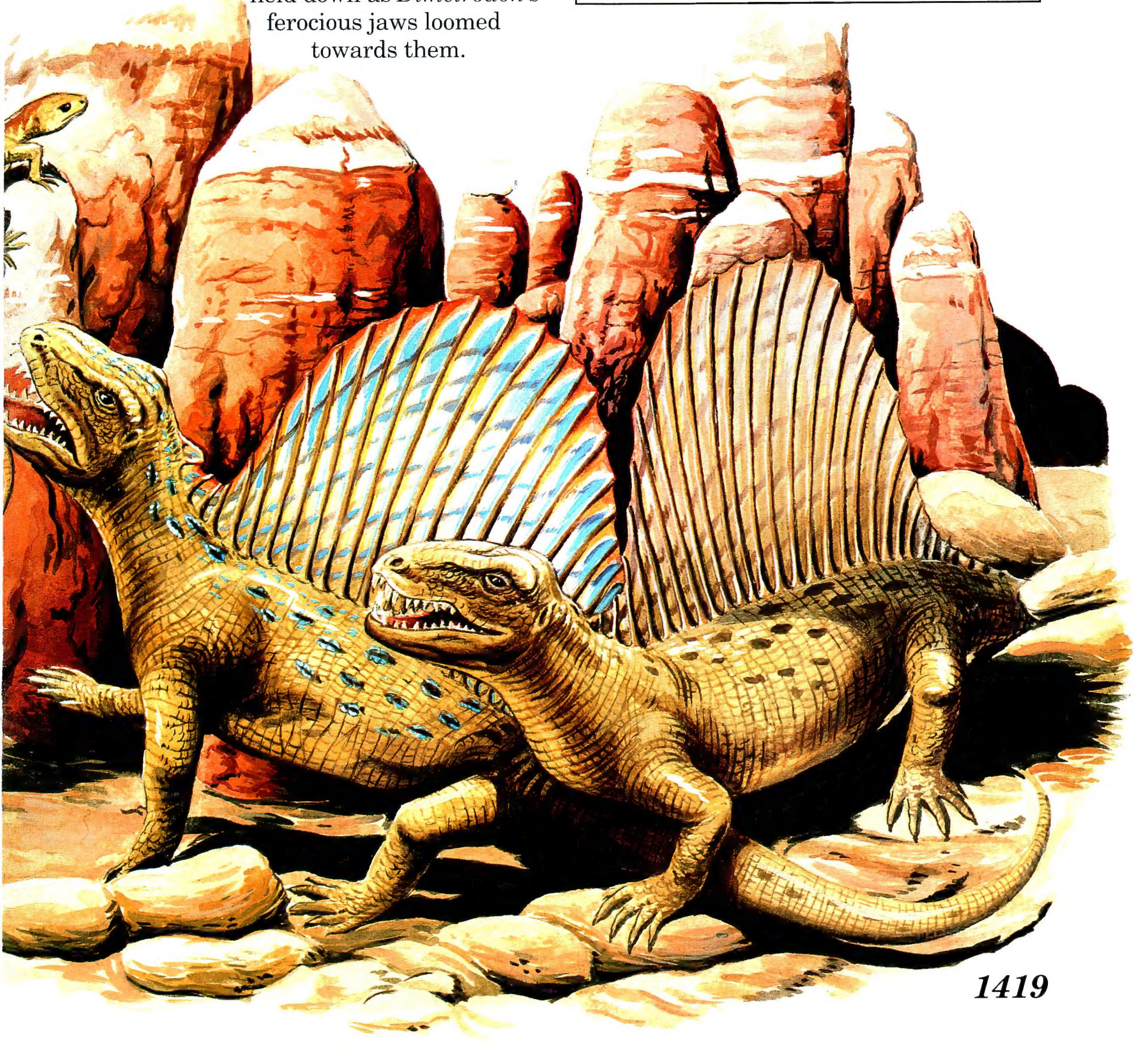
Dimetrodon were carnivores and they often used their razor-sharp front teeth to catch smaller lizards such as _Araeoscelis_.

HELD DOWN

Like the huge-headed carnosaurs of the dinosaur age, *Dimetrodon*'s skull was very big compared to the rest of its body. The animal's weight was supported by four sprawling legs with clawed feet. As *Dimetrodon* crawled along, its claws gripped the ground beneath for extra stability. They were also effective weapons. Small creatures were easily caught and held down as *Dimetrodon*'s ferocious jaws loomed towards them.

MONSTER FACTS

- **NAME:** *Dimetrodon* (die-met-ro-don) means 'two long teeth'
- **GROUP:** mammal-like reptile (MLR)
- **SIZE:** 3m long
- **FOOD:** meat
- **LIVED:** about 280 million years ago in Early Permian Period in Texas and Oklahoma, USA



THERIZINOSAURUS

On each hand *Therizinosaurus* had a gigantic claw which was about as long as a child's arm.

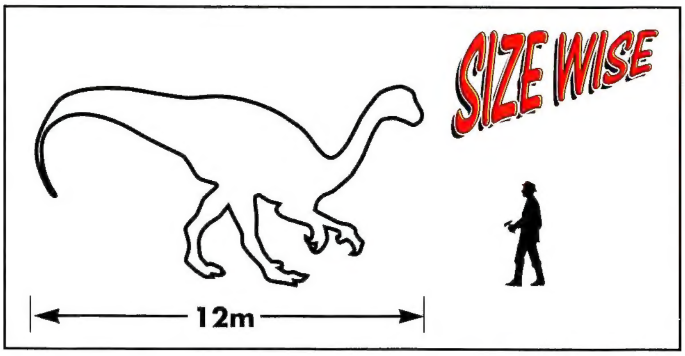
During an expedition to the Gobi Desert, Mongolia, in 1948, scientists discovered some large, bony claws. Later, a bit of another claw, an arm, legs and a tooth were found. They belonged to *Therizinosaurus*, a dinosaur that could easily tear open flesh.

LONG REACH

Therizinosaurus was long enough to reach both ends of a tennis net at once. It walked on two strong legs, holding its long tail out behind. Its arms were as long as a small car.

CURVED CLAWS

But this dinosaur's most amazing feature was its curved claws. To get an idea of the actual size of its biggest claws, hold out your arm and curve it round slightly. *Therizinosaurus*' largest claws were roughly the length from your neck to your wrist.

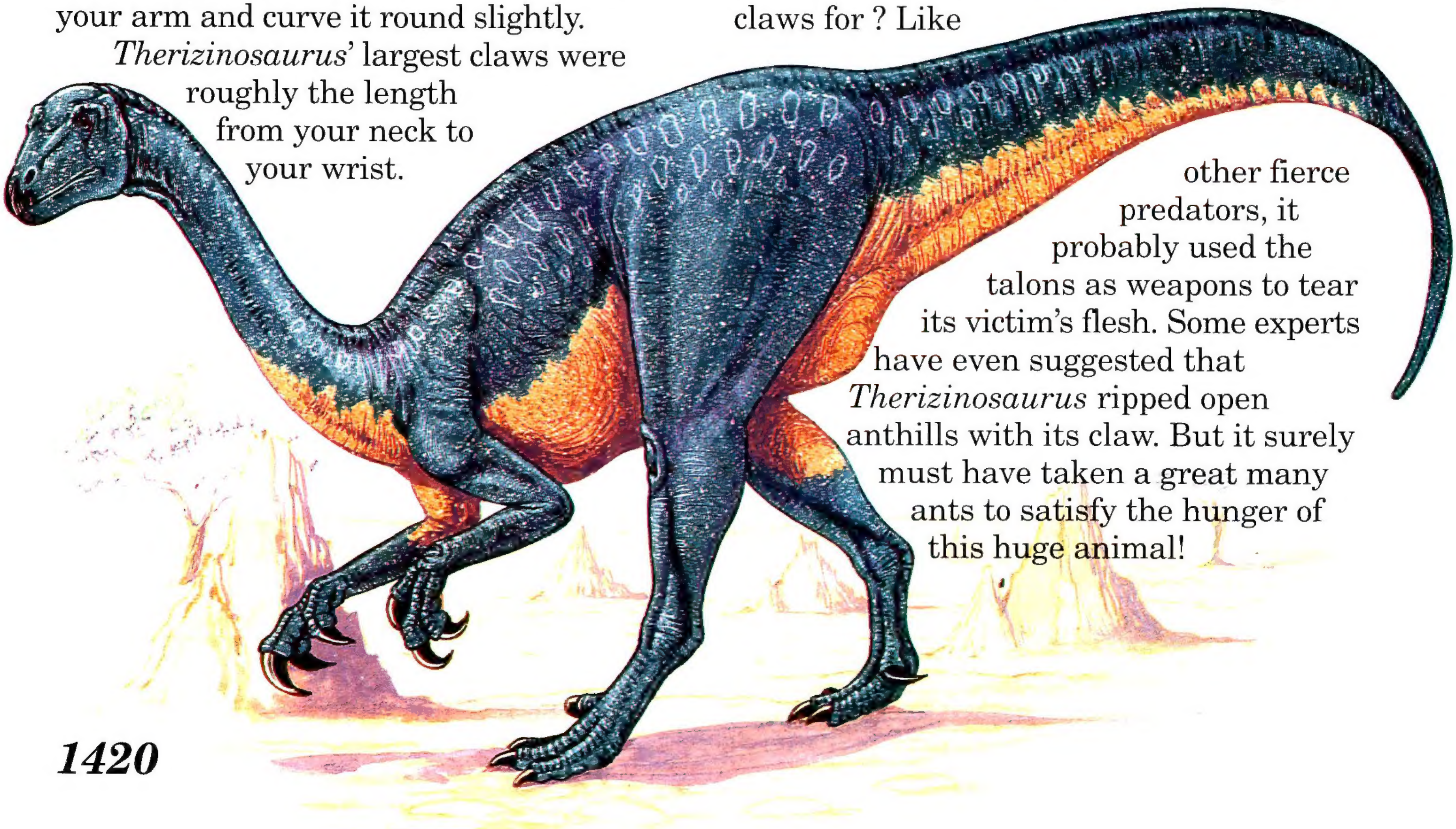


MONSTER FACTS

- **NAME:** *Therizinosaurus* (ther-ih-zin-oh-saw-rus) means 'scythe reptile'
- **GROUP:** dinosaur
- **SIZE:** up to 12m long
- **FOOD:** meat, insects, plants
- **LIVED:** about 75 million years ago in the Late Cretaceous Period in Mongolia

LETTING RIP

So what did *Therizinosaurus* use its great claws for ? Like other fierce predators, it probably used the talons as weapons to tear its victim's flesh. Some experts have even suggested that *Therizinosaurus* ripped open anthills with its claw. But it surely must have taken a great many ants to satisfy the hunger of this huge animal!



LAGOSUCHUS

The rabbit-sized *Lagosuchus* was probably an ancestor of the dinosaurs.

Scurrying along on its two skinny legs, *Lagosuchus* looked just like a miniature dinosaur. Experts think that *Lagosuchus*' legs and hips were too primitive for it to be a real dinosaur. But it did also share many of the same features as small, two-legged dinosaurs.

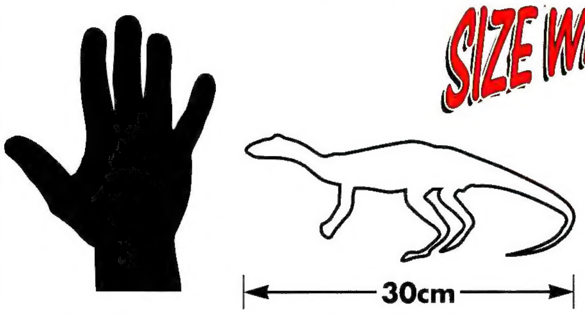
TWICE AS LONG

Many animals that run fast have legs of a similar shape. The dinosaur *Velociraptor* had long legs with muscular thighs and slender shins. It could take long strides and move at great speed. *Lagosuchus* had shins which were twice the length of its thighs. So, like *Velociraptor*, it must have been a good sprinter. *Lagosuchus* was also more like a dinosaur than a reptile as it could run with its hind legs held under its body and not sprawled out on either side.

CLOSE ANCESTORS

Some experts think *Lagosuchus* was related to pterosaurs and crocodiles.

SIZE WISE

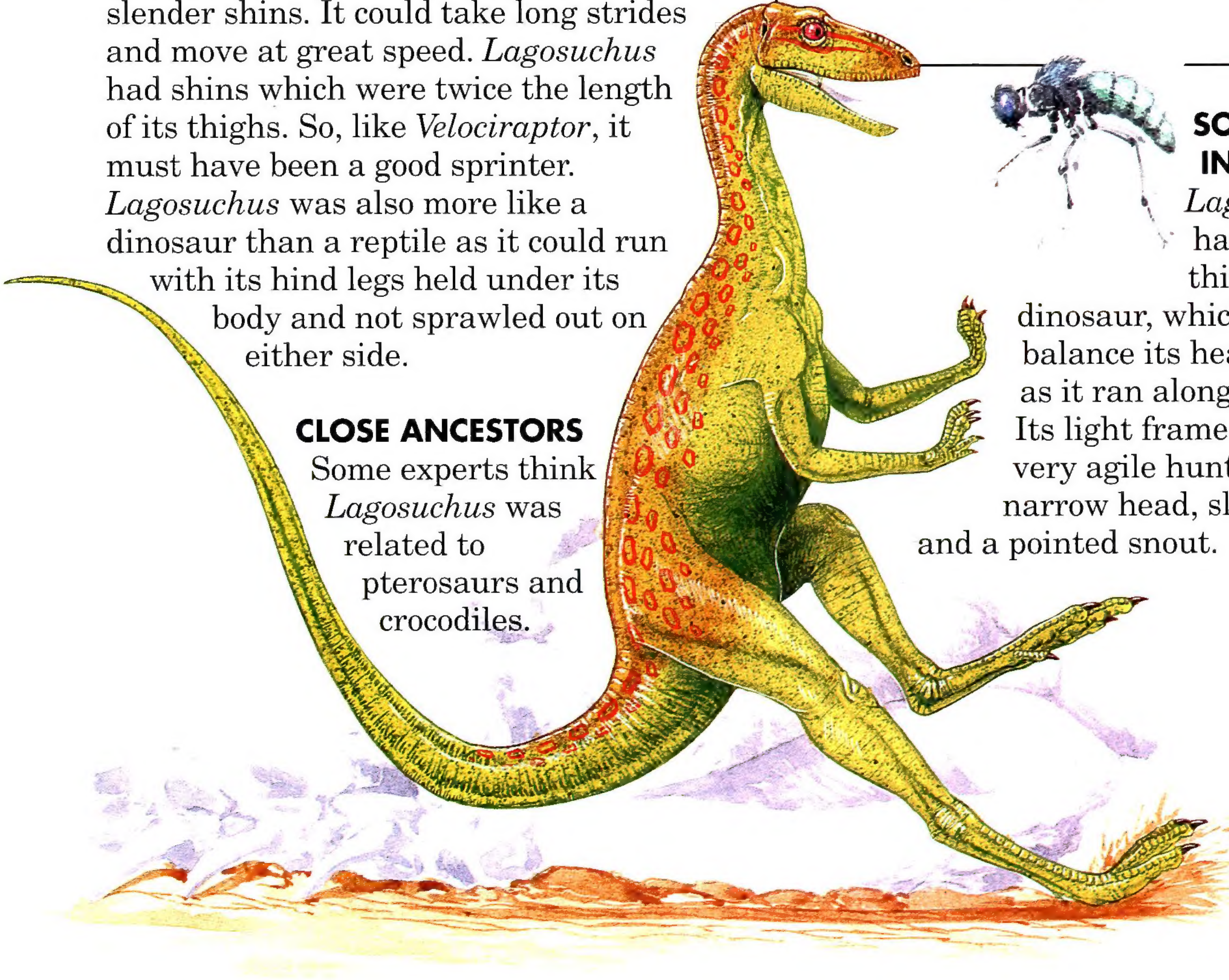


MONSTER FACTS

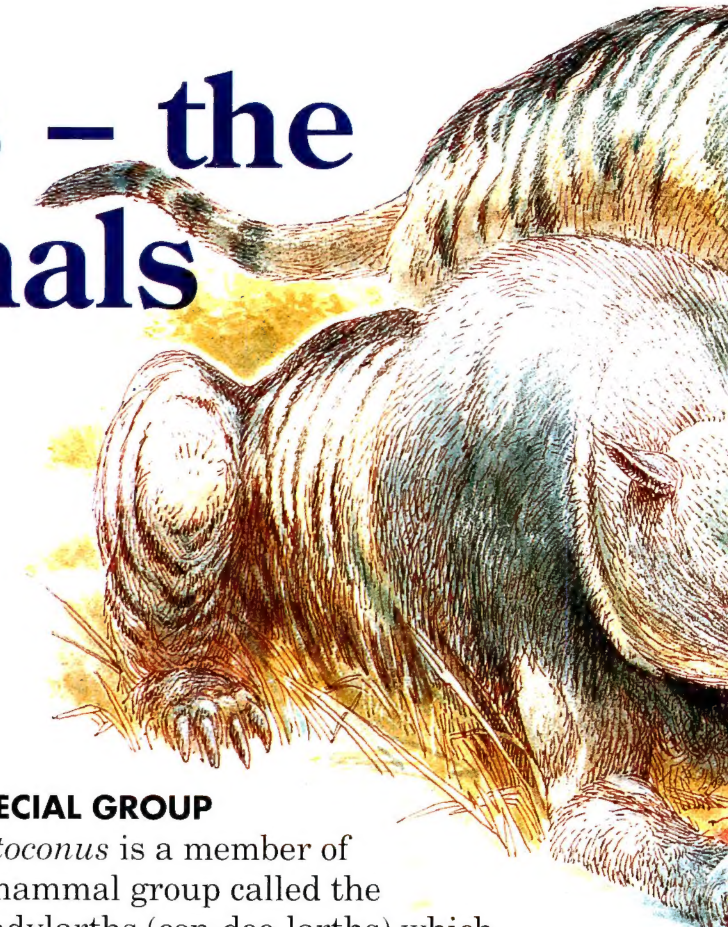
- **NAME:** *Lagosuchus* (lag-oh-sook-us) means 'rabbit crocodile'
- **GROUP:** reptile
- **SIZE:** about 30 cm long
- **FOOD:** meat
- **LIVED:** about 220 million years ago in the Mid-Triassic Period in Argentina.

SOMETHING IN COMMON

Lagosuchus had a long, thin tail like a dinosaur, which helped to balance its head and neck as it ran along after prey. Its light frame made it a very agile hunter. It had a narrow head, slender jaws and a pointed snout.



Condylarths – the early mammals

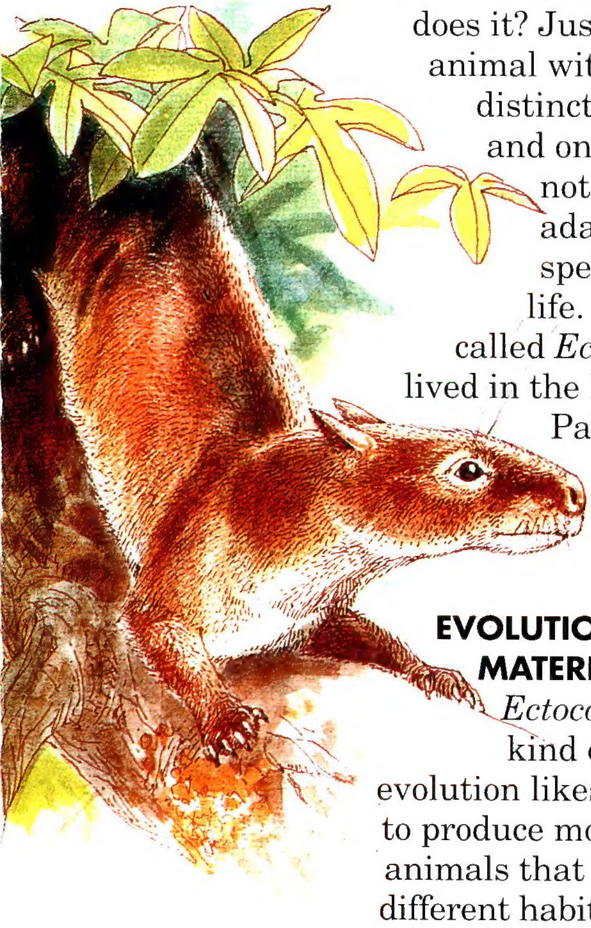


Not long after all the dinosaurs died out, the first hoofed mammals appeared on Earth.

Picture an animal as big as a sheep, with a leg at each corner, a tail at one end, five toes on each foot and 44 teeth in its jaws. It doesn't sound very special does it? Just another animal with no distinctive features and one which had not particularly adapted to a special way of life. This animal is called *Ectoconus* and it lived in the Early Palaeocene Epoch in North America.

EVOLUTION'S RAW MATERIAL

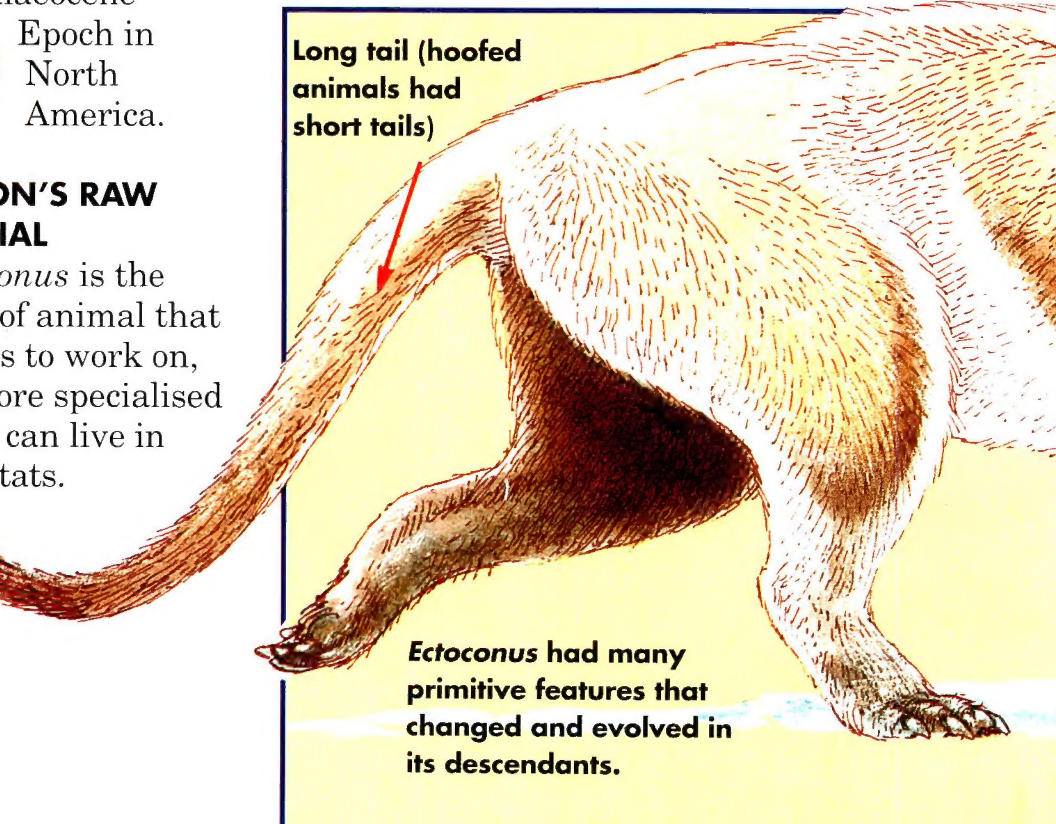
Ectoconus is the kind of animal that evolution likes to work on, to produce more specialised animals that can live in different habitats.



The tiny *Hyopsodus*, a condylarth, came from Wyoming in the USA.

SPECIAL GROUP

Ectoconus is a member of a mammal group called the condylarths (con-dee-larths) which developed at the very beginning of the Age of Mammals. It was the basic model from which more complex animals evolved. It seems likely that all the ungulates (the hoofed mammals), the elephants and even the whales came from these beasts.



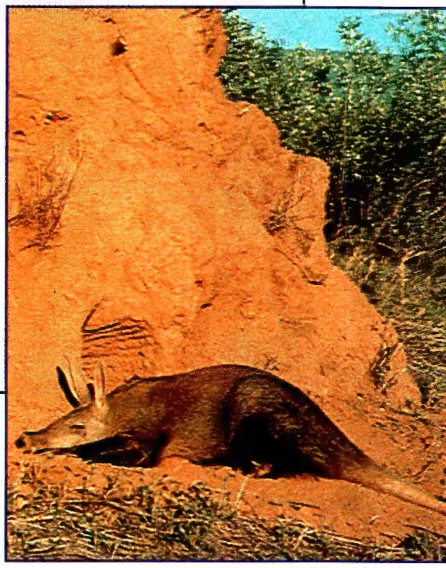
Long tail (hoofed animals had short tails)

***Ectoconus* had many primitive features that changed and evolved in its descendants.**

Andrewsarchus were gigantic meat-eating condylarths.

Is it true that there is a living condylarth?

The animal alive today that is most closely related to the condylarths could well be the aardvark of Africa (right). The problem is that it is so specialised as a termite-eater that it is difficult to see a connection with its primitive ancestors.



SOME EARLY TRIES

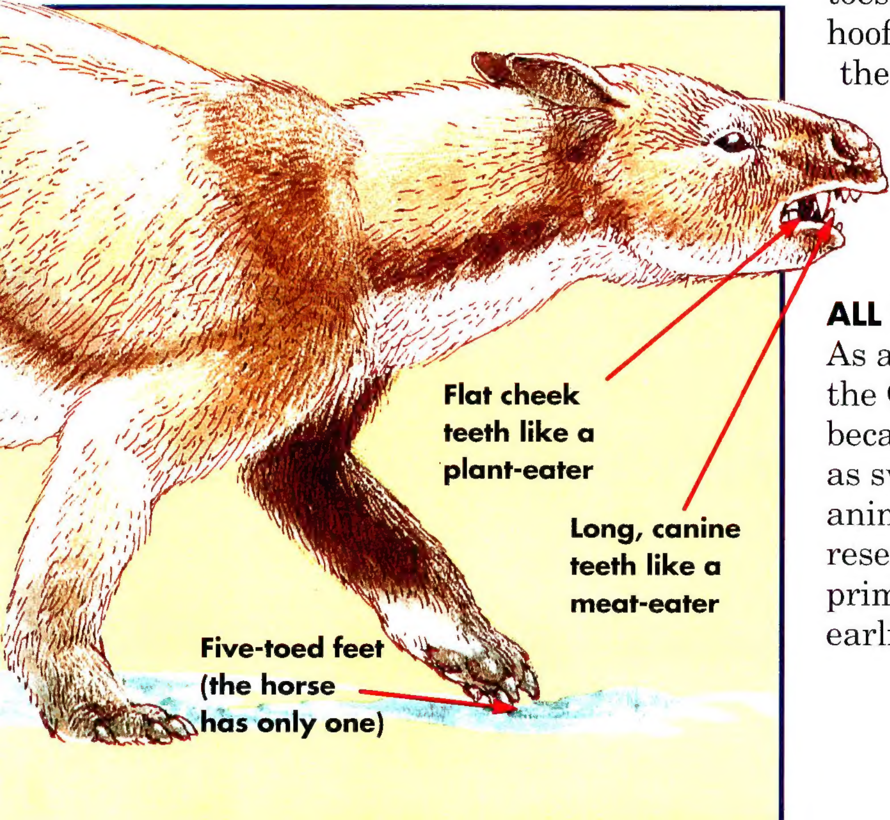
However, while they all existed together as a group, the condylarths developed into a number of different forms. One early form displayed claws instead of hoofs or nails.

THE MEAT-EATERS

Another form of condylarth became meat-eaters, hunting the creodonts and the modern carnivores. *Andrewsarchus* was a gigantic meat-eating condylarth. Whales probably evolved from these meat-eaters.

HOOFS ARRIVE

Yet another form developed hoofs on its toes. *Phenacodus* was the earliest of the hoofed animals. It may have evolved into the odd-toed ungulates (animals like horses), the even-toed ungulates (animals like deer and antelope) or the strange extinct ungulates that once lived in South America.


Flat cheek teeth like a plant-eater
Long, canine teeth like a meat-eater
Five-toed feet (the horse has only one)

ALL GONE

As a group, the condylarths existed until the Oligocene Epoch. Their descendants became so specialised, as running animals, as swimming animals, or as ant-eating animals, that we cannot see any resemblance between them and the primitive creatures that existed in the earliest Palaeocene times.

Amblypods

One early development from the condylarth line was a special group that we call the amblypods – the 'slow feet'.

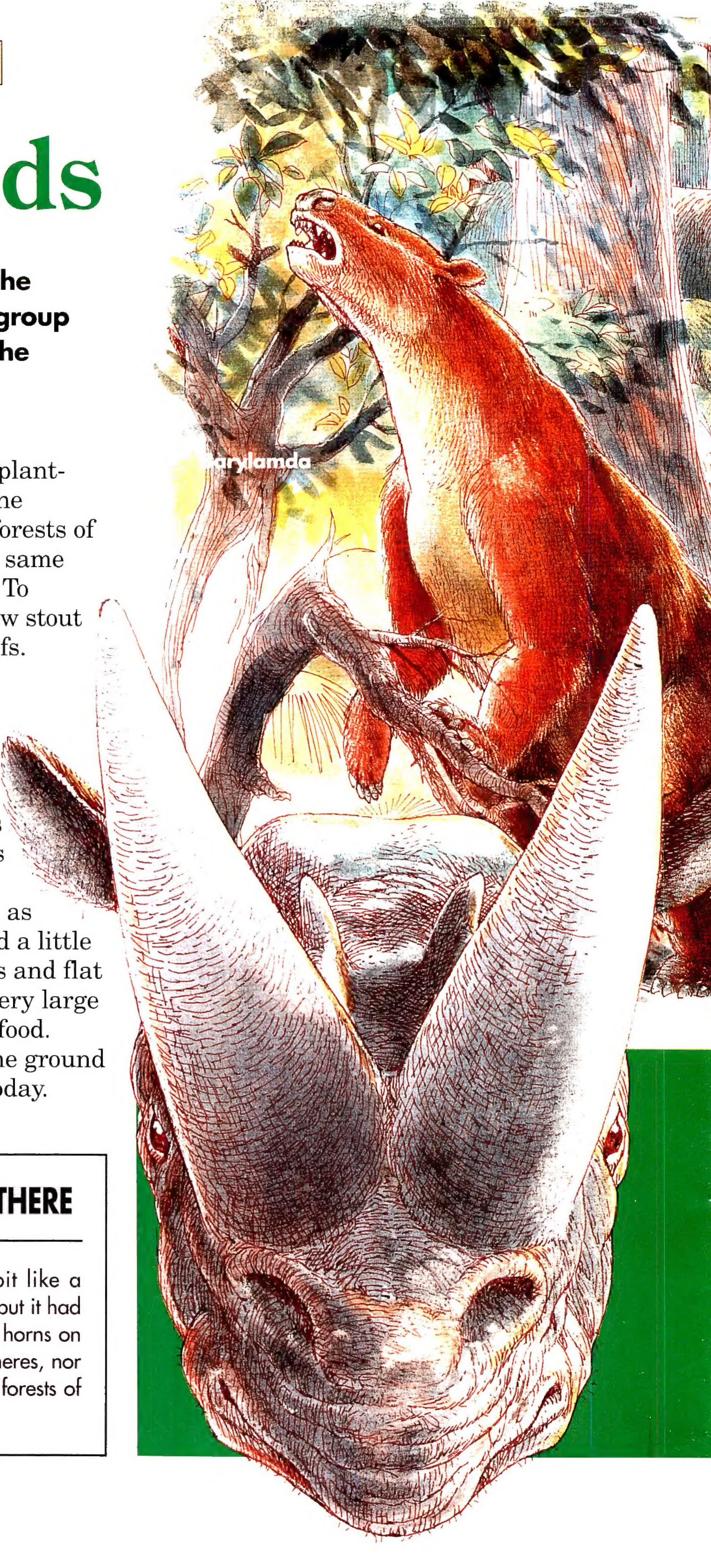
Amblypods were all large plant-eaters. They wandered the Palaeocene and Eocene forests of North America and Europe in the same way as today's rhinos and hippos. To support their weight, their feet grew stout and their nails developed into hoofs.

ROOTERS

The earliest amblypods date from the Mid-Palaeocene. These were the pantodonts which were about the size of dogs. Later types developed into pony-sized animals such as *Barylamda,* and hippopotamus-sized animals such as *Coryphodon*. They probably looked a little like bears, with their heavy bodies and flat feet, but their mouths often had very large teeth for dealing with their plant food. They probably scraped about in the ground for roots and tubers like pigs do today.

What is? AN ARSINOITHERE

We are not quite sure. It looked a bit like a uintathere, with its rhinoceros-like body, but it had a pair of enormous hollow (yes, hollow) horns on its head. It was not related to the uintatheres, nor to anything else we know. It lived in the forests of Africa in Oligocene times.



HORNED BEASTS

The most spectacular of the amblypods belonged to a group called the uintatheres (oo-in-ta-theers). These looked a bit like rhinoceroses but their heads had a set of six horns. The first pair may have been sheathed in horn, but the other two pairs were probably covered in skin like those of a giraffe. Not content with these, the uintatheres had huge tusks in the upper jaw, probably used for defence, or for slashing bark off trees. *Uintatherium* was the largest of the uintatheres.

COME AND GONE

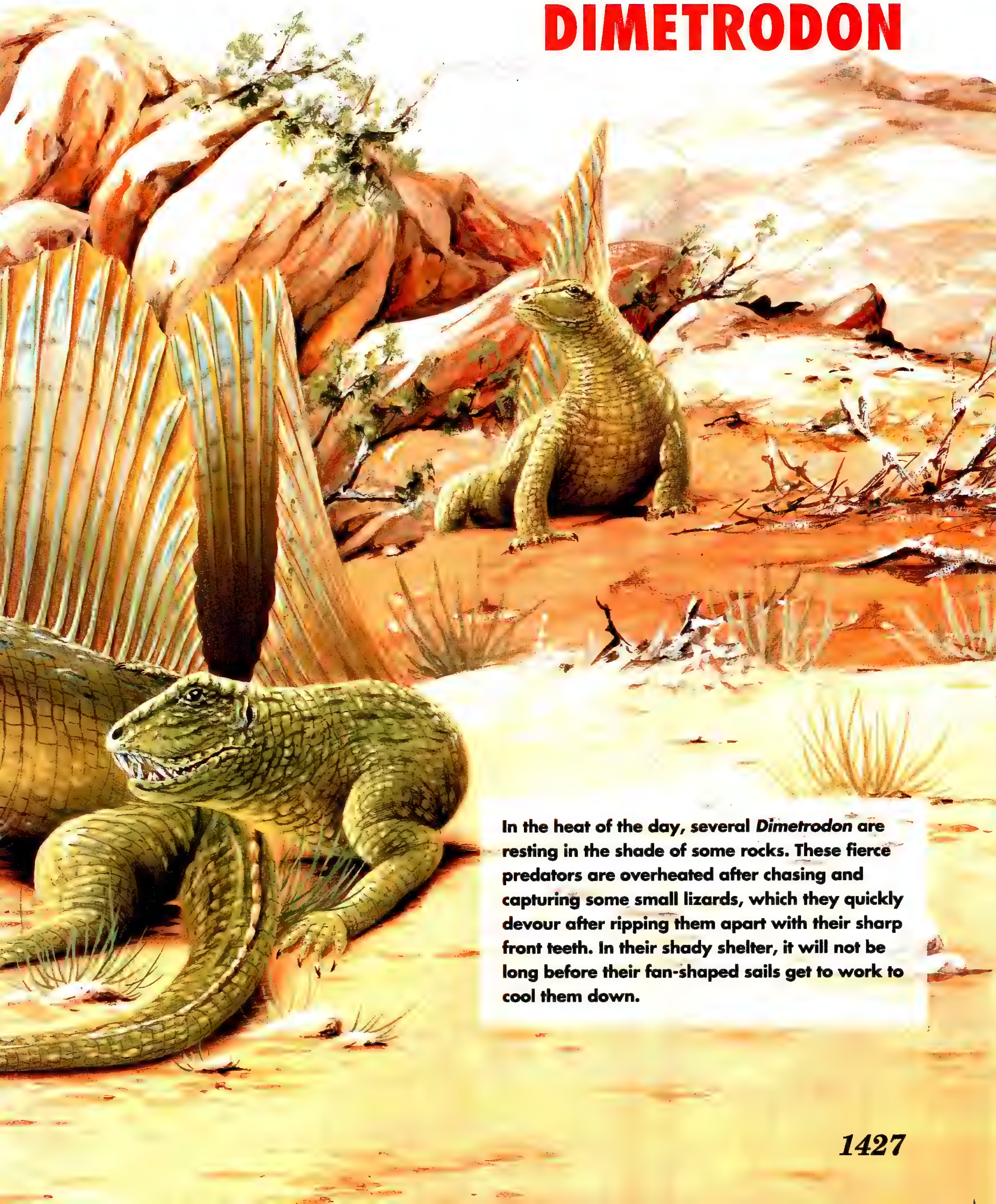
The amblypods were not a very intelligent line of beasts; none of them had much of a brain. They had all died out by the Oligocene, by which time their places had then been taken by other heavy-footed, hoofed mammals that had evolved from the original condylarths.

Arsinoitherium **had two enormous horns that were hollow.**

Some early amblypods looked like today's two-horned black rhino.

GIANTS OF THE PAST

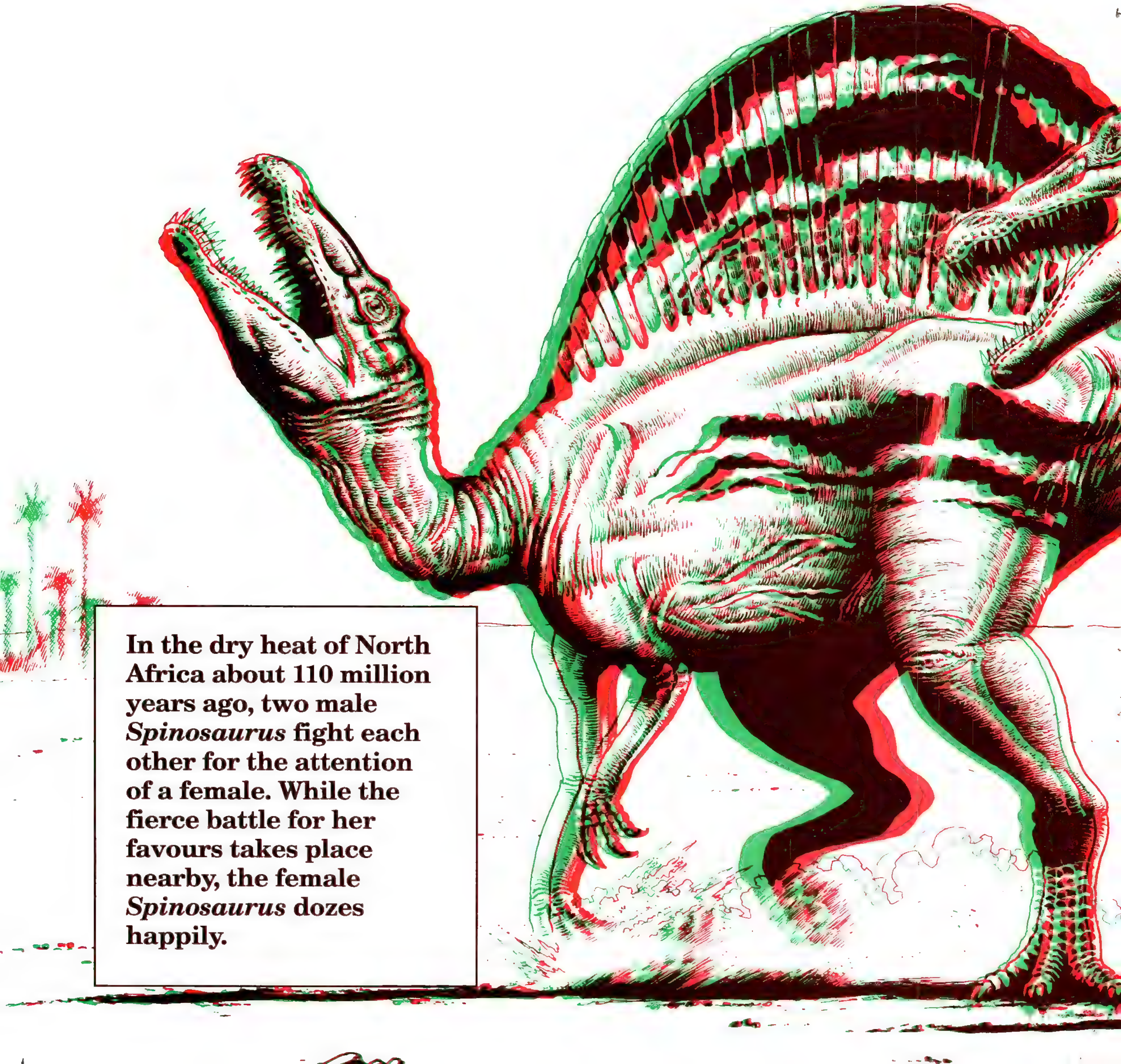
DIMETRODON



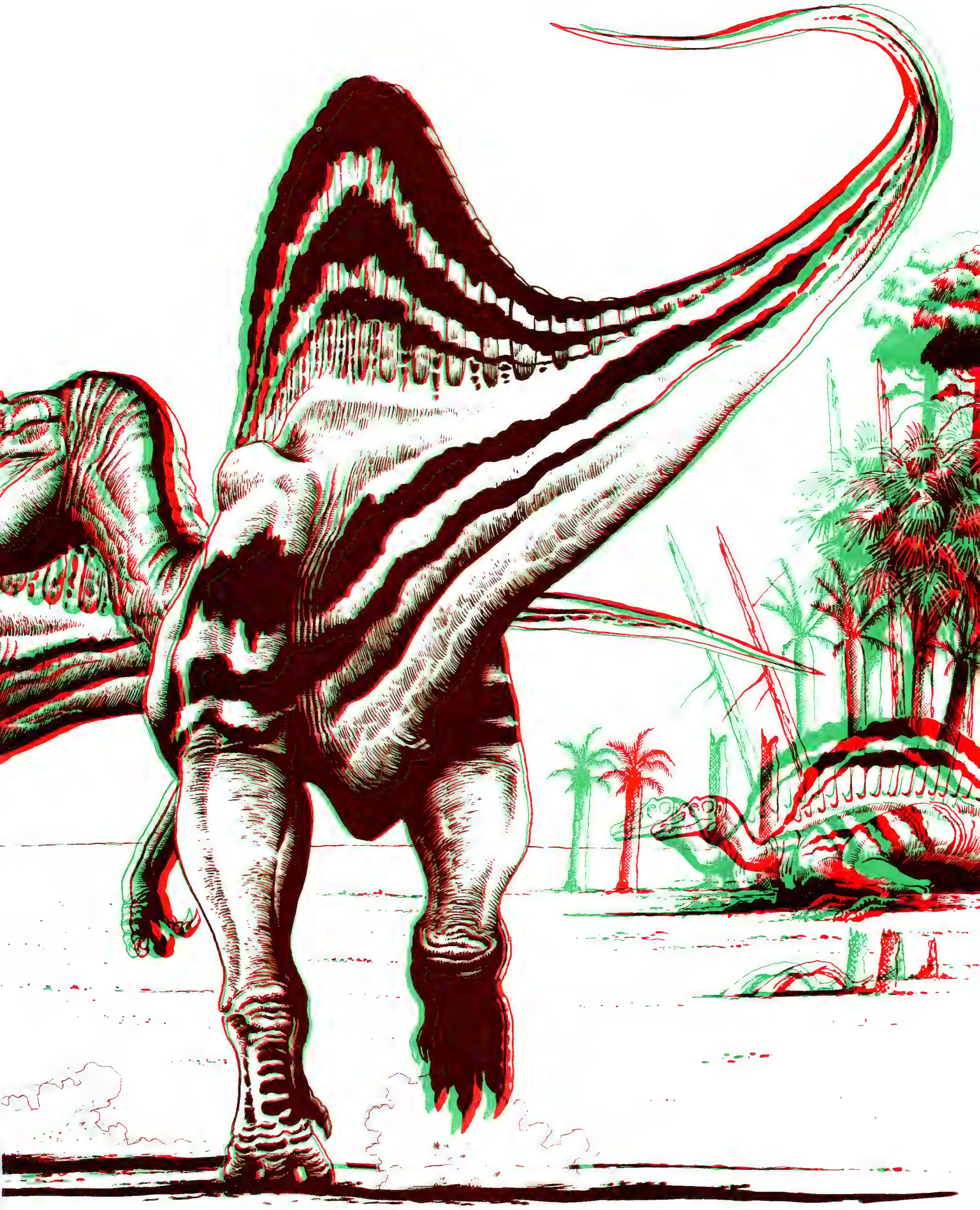
In the heat of the day, several *Dimetrodon* are resting in the shade of some rocks. These fierce predators are overheated after chasing and capturing some small lizards, which they quickly devour after ripping them apart with their sharp front teeth. In their shady shelter, it will not be long before their fan-shaped sails get to work to cool them down.

3-D Gallery 69

SPINOSAURUS



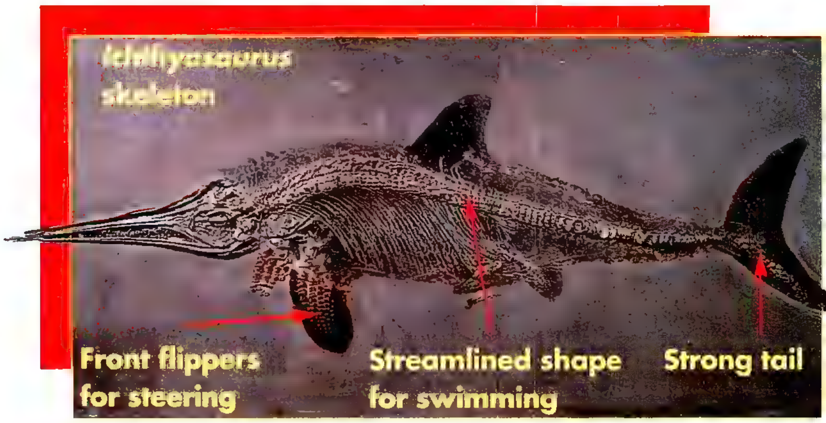
In the dry heat of North Africa about 110 million years ago, two male *Spinosaurus* fight each other for the attention of a female. While the fierce battle for her favours takes place nearby, the female *Spinosaurus* dozes happily.



Stories in the bones

The skeleton of a prehistoric animal can tell experts what it ate and how it moved, as well as its size and shape.

An animal's shape is usually well suited to the life it leads. Here you can see how varied skeletons can be and what they can show us about their owners.



HARD FACTS

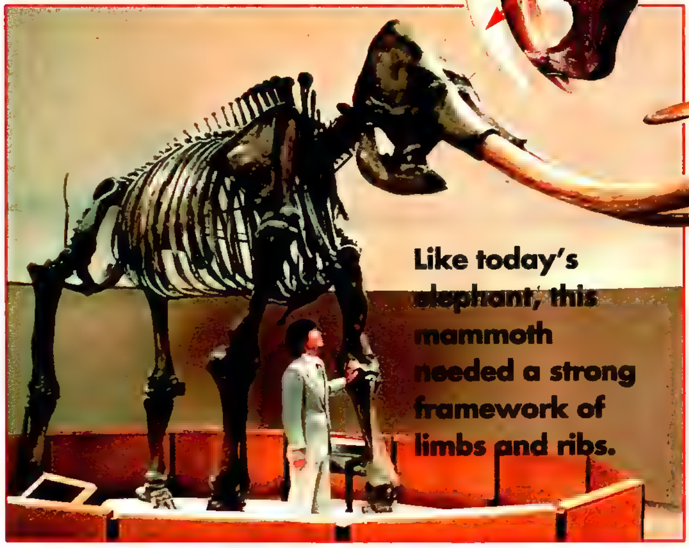
Just like humans, prehistoric animals needed a skeleton in order to support their muscles. The skeleton protected the heart, brain and other soft parts of the animal. Most skeletons are very hard, so they fossilize easily.

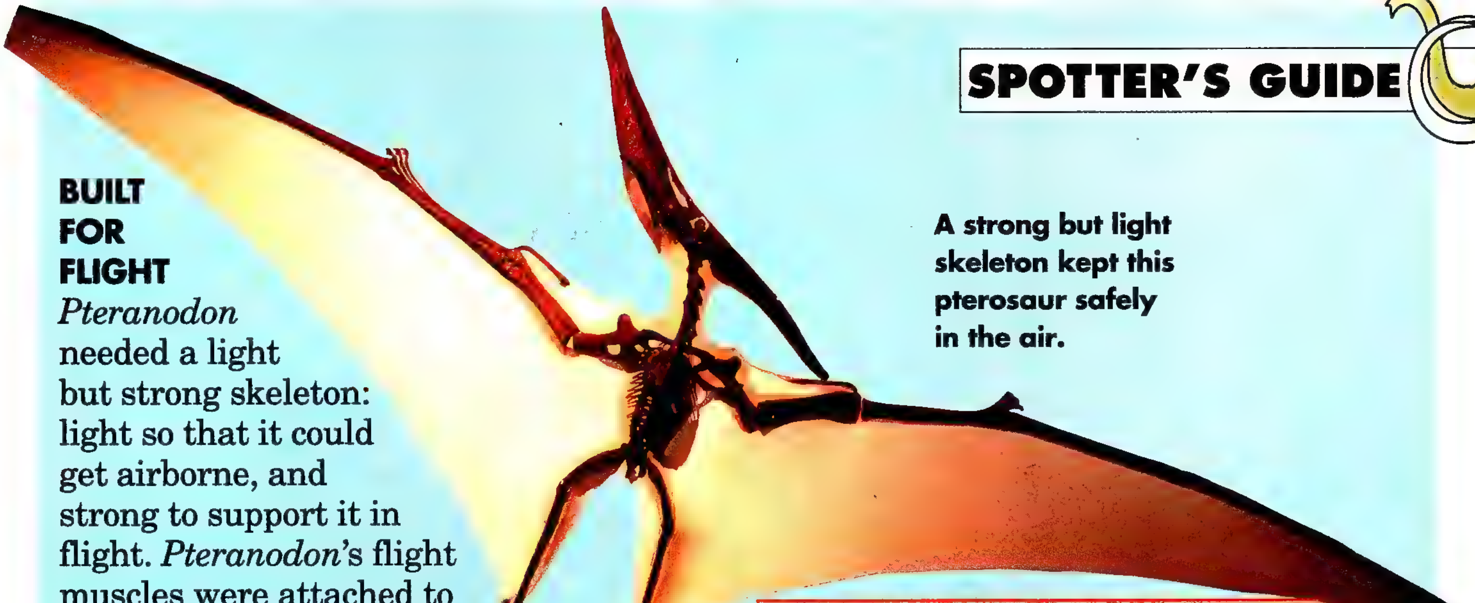
SIMILAR SKELETONS

If a prehistoric animal is like a modern animal, it is much easier to restore its skeleton. The Columbian mammoth, for example, looked very like a modern elephant.

LIKE A DOLPHIN

The skeleton of the reptile *Ichthyosaurus* is very similar to that of today's dolphin. *Icthyosaurus*' body was streamlined for fast swimming. It swam by swishing its tail from side to side. Its front flippers were used for steering through the water.


Like today's elephant, this mammoth needed a strong framework of limbs and ribs.



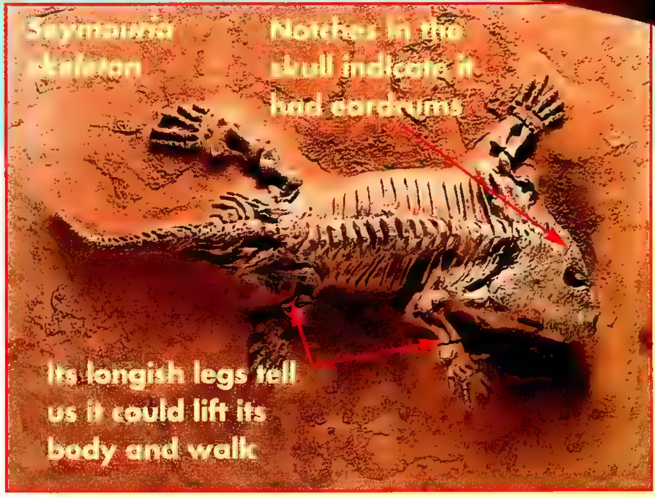
BUILT FOR FLIGHT

Pteranodon needed a light but strong skeleton: light so that it could get airborne, and strong to support it in flight. *Pteranodon*'s flight muscles were attached to a bony chest plate and its arm and finger bones supported the skin of its wings.

A strong but light skeleton kept this pterosaur safely in the air.

TELL-TALE CLUES

Seymouria is a missing link between reptiles and amphibians. Although it is an amphibian, its skeleton shows it held its body up off the ground like a reptile. On its skull is a notch, indicating an eardrum, so it could hear on land. It lived 260 million years ago in the Permian period.

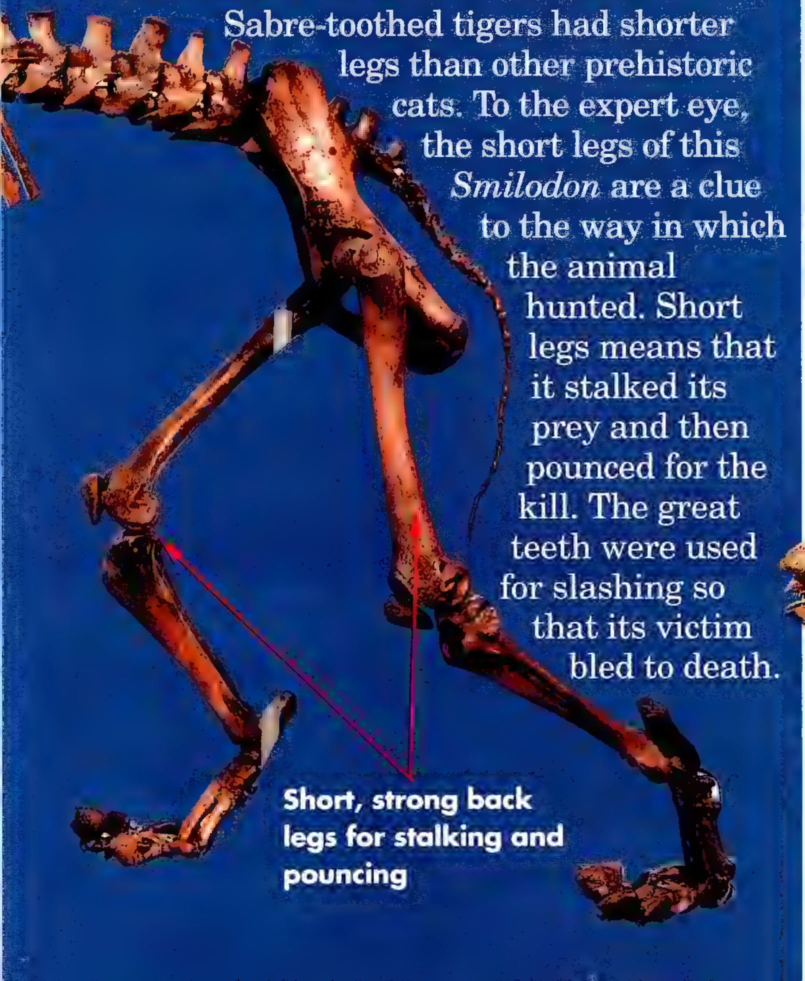


Seymouria skeleton

Notches in the skull indicate it had eardrums

Its longish legs tell us it could lift its body and walk

SMILODON – SHORT LEGS, LONG TEETH

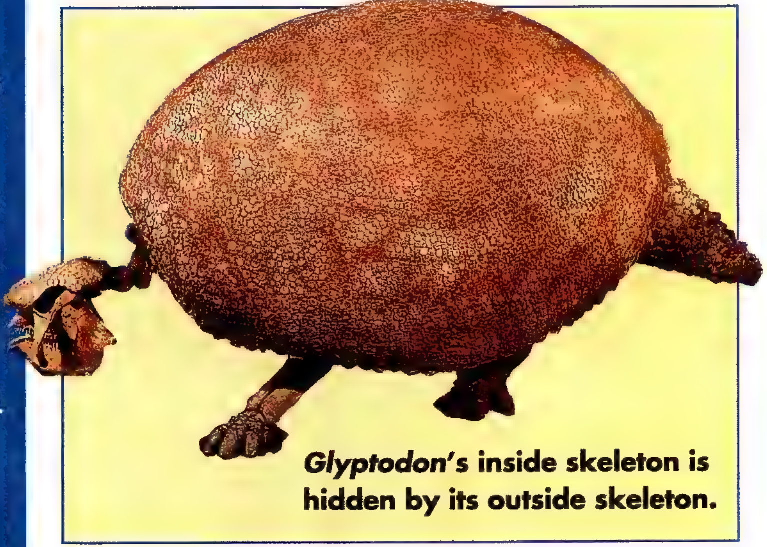


Sabre-toothed tigers had shorter legs than other prehistoric cats. To the expert eye, the short legs of this *Smilodon* are a clue to the way in which the animal hunted. Short legs means that it stalked its prey and then pounced for the kill. The great teeth were used for slashing so that its victim bled to death.

Short, strong back legs for stalking and pouncing

INSIDE AND OUT

Glyptodon was a member of the only mammal group to have a skeleton both inside and outside its body. Its huge shell protected both the outside of its body and the second skeleton inside. This 'mammal tortoise' was related to today's armadillos.



***Glyptodon*'s inside skeleton is hidden by its outside skeleton.**

The mystery of the stabbed skull!

A gaping skull wound made 35 million years ago set time detectives on the track of the solution to an unsolved mystery.

What had scarred the fossil skull so badly? When scientists solved this puzzle, they discovered they had also found the answer to a far more important question. Follow the clues to find out how they did it.

CLUE 1

The fossilized skull was found in North America more than 40 years ago. Experts were excited to discover that it belonged to a new species of prehistoric biting cat. They called it *Nimravus bumpensis.*

CLUE 2

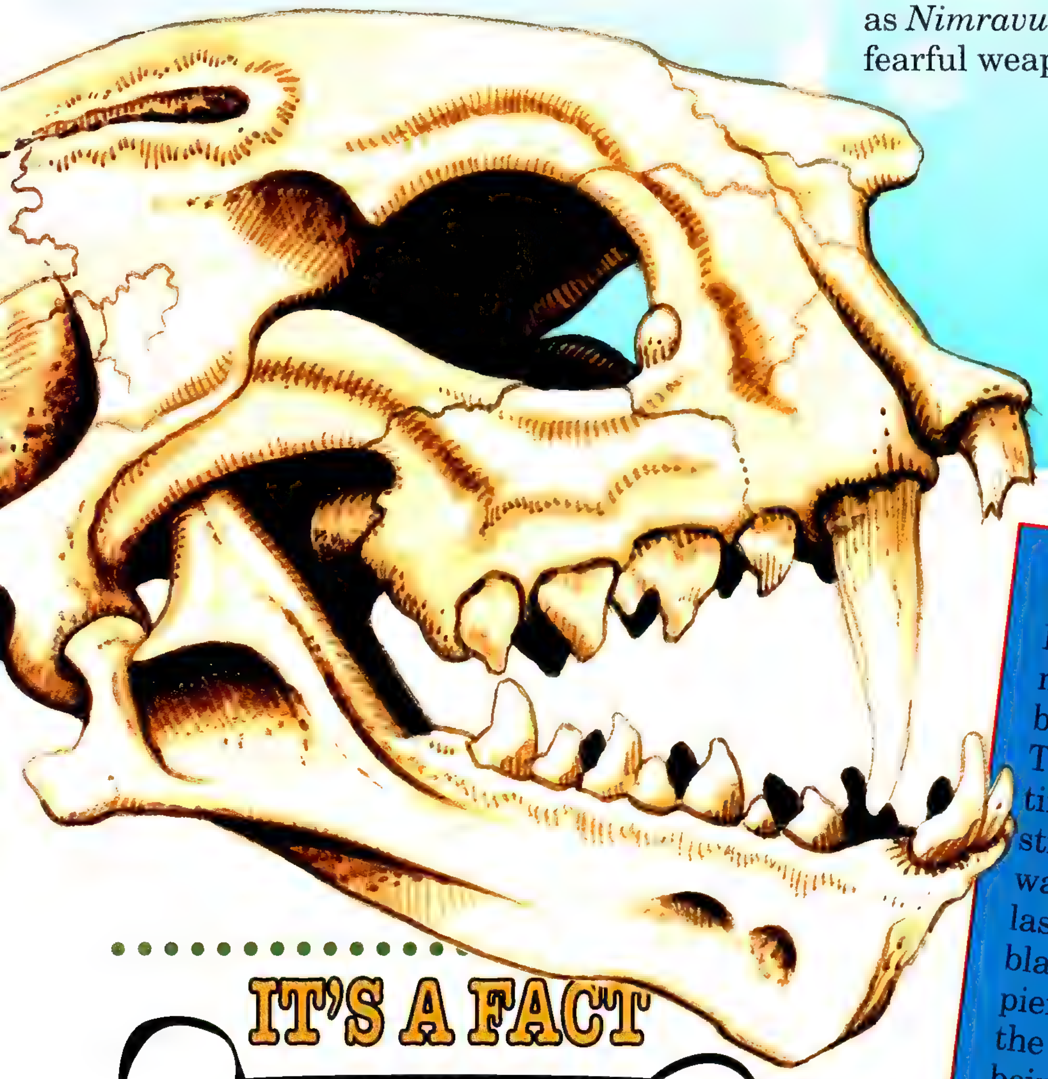
Nimravus was called a biting cat because it killed its prey by biting it on the neck and breaking the backbone. It was a powerful hunter with few enemies. But this *Nimravus* had clearly been the victim of a savage attack. What creature would have dared to pounce on it?

CLUE 3

A deep scar in the skull showed that *Nimravus* had been dealt a violent, stabbing blow. How had its attacker inflicted such a gaping wound?

CLUE 4

The size and shape of the wound showed that it must have been made by a slashing, tusk-like tooth. So scientists asked themselves: what other hunter living at the same time as *Nimravus* was armed with such a fearful weapon?



GOT IT!
Experts have agreed that the mystery attacker must have been a sabre-toothed tiger. The only creature alive at the time that was capable of striking such a savage blow was *Eusmilus*. It must have lashed out with its huge, blade-like front teeth and pierced *Nimravus* through the skull. *Nimravus* escaped being gored by both *Eusmilus'* sabre teeth because it had a narrow head. So, while one tusk-like tooth struck home, the other sliced empty air.

IT'S A FACT

STAB WOUND
A sabre-tooth killed by stabbing its prey with its blade-like front teeth. It normally aimed for its victim's neck arteries and waited for the creature to bleed to death before feeding.

SAVED

Eusmilus stabbed *Nimravus* in the head and not the neck, and *Nimravus* survived the blow. Experts noticed that the gash in the biting cat's skull had a bumpy ring around it. This was the scar the wound left when it healed. So *Nimravus* obviously lived long enough to recover from the attack.

RARE FIND

The discovery of a wound in the *Nimravus* skull was very exciting. It was the first clear proof scientists had found of how a sabre-tooth attacked. Experts had guessed that *Eusmilus* must have stabbed its victims with its tusk-like front teeth. Now they had the evidence to prove it.

SAVAGE STRUGGLE

Why did *Eusmilus* strike? Perhaps *Nimravus* was trying to steal its kill. The sabre-tooth could have lashed out ferociously to drive the biting cat away.

TERRIBLE TUSKS

Eusmilus had some of the longest front teeth of any sabre-tooth. They were so long it must have been quite difficult to lash out with them. Experts have calculated that *Eusmilus* had to open its lower jaw as wide as 90° before it could stab its prey effectively.

Is it true that *Eusmilus* could have died in the fight?

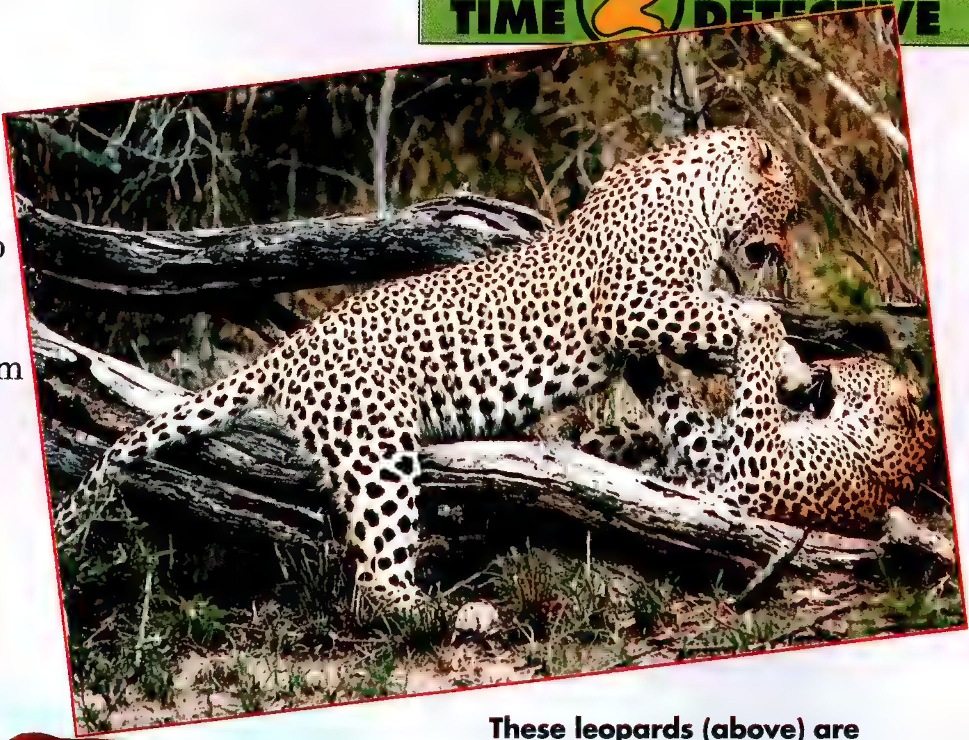
No fossil evidence has been found to show what happened to the *Eusmilus* that attacked *Nimravus*. But it is possible that the sabre-tooth could have been fatally injured in the struggle. If *Nimravus* had bitten *Eusmilus*, it would have hung on until it killed the sabre-tooth. That was how it hunted.

BORN TO RUN

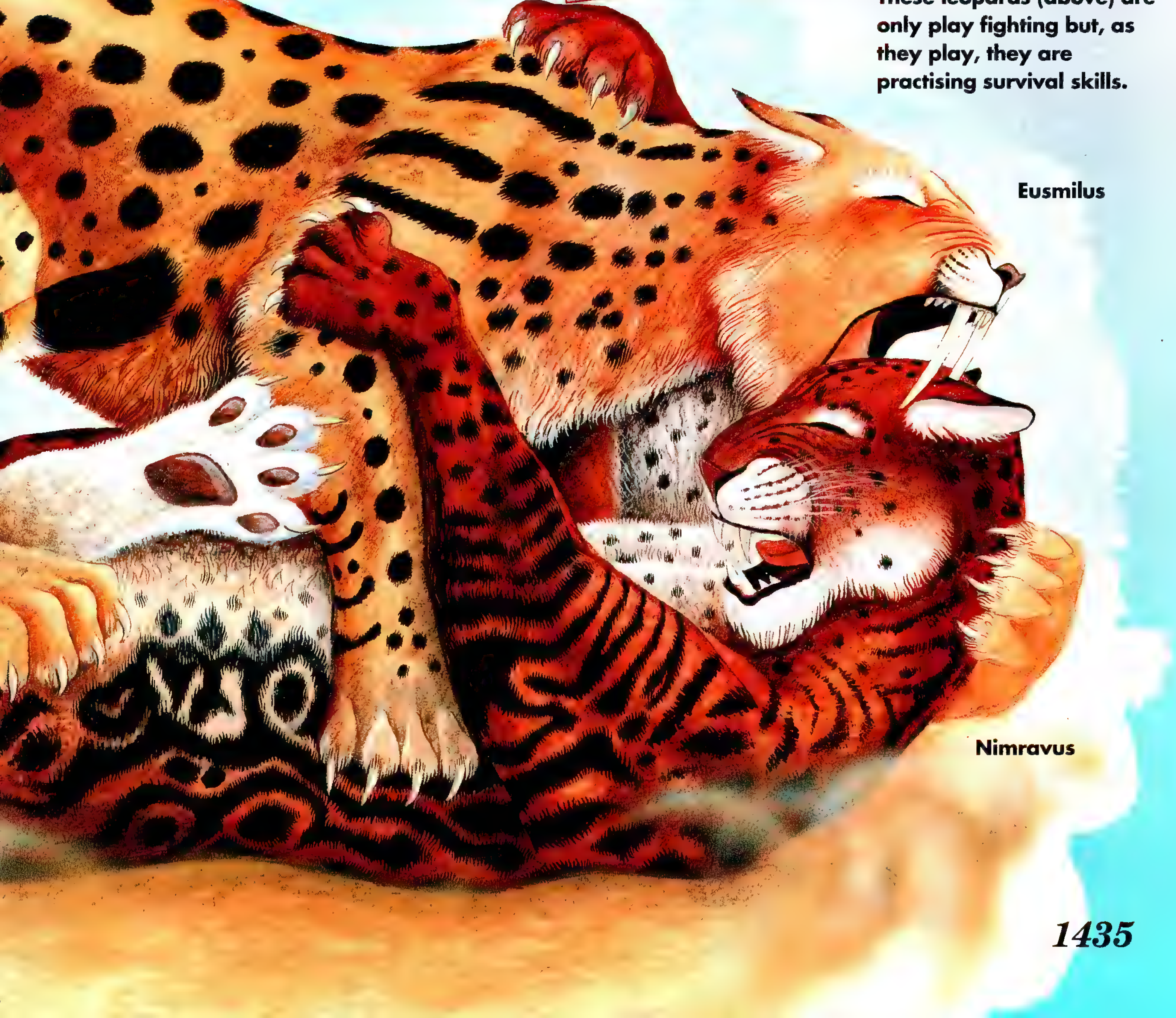
Nimravus was probably pinned down by *Eusmilus*. But somehow it managed to struggle free. The biting cat was built for speed. Scientists believe it could have run as fast as a modern cheetah. Once *Nimravus* broke loose, it could have sprinted away. The slower-moving sabre-tooth would have been unable to catch it.

MYSTERY SOLVED

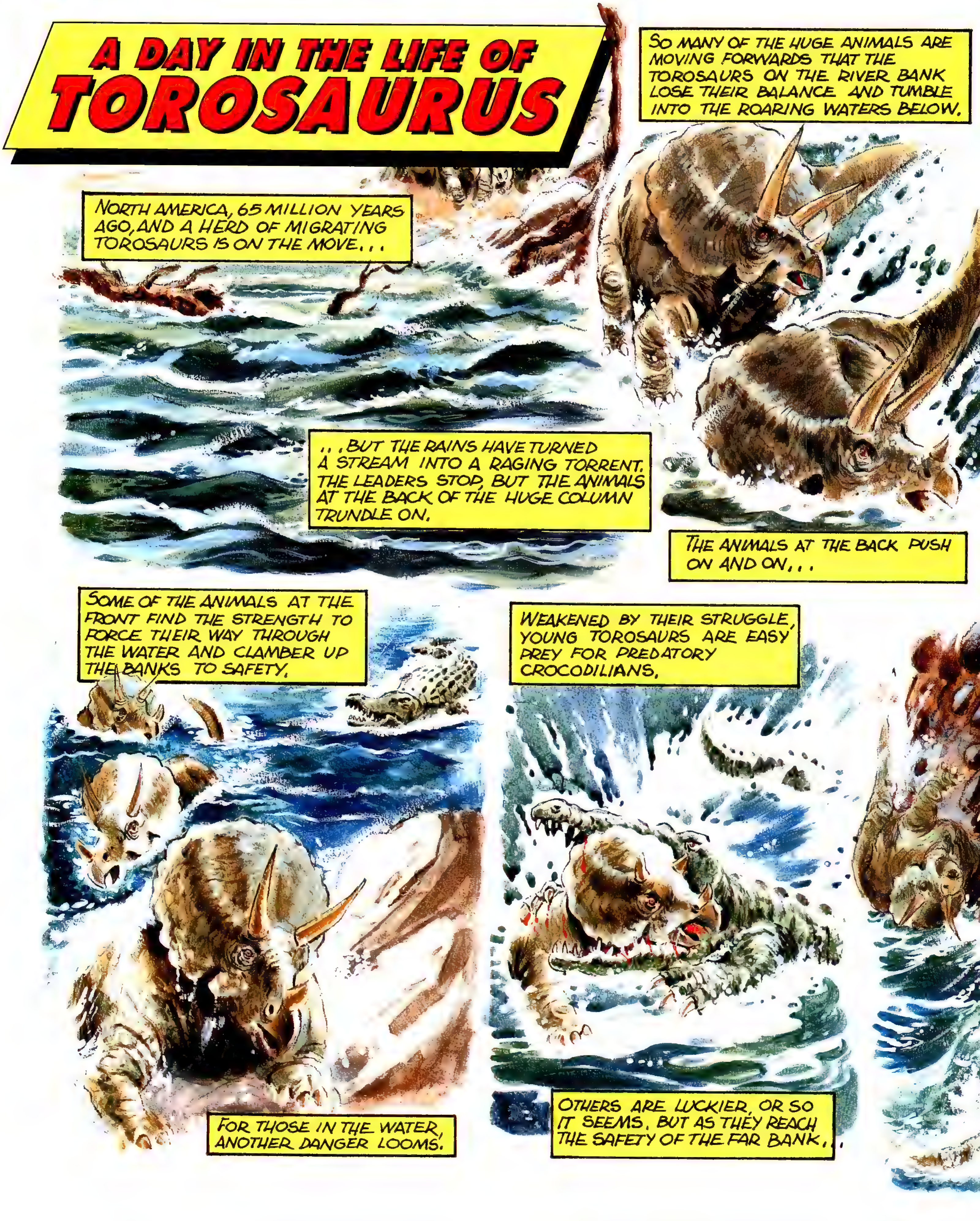
So, from one fossilized skull, scientists have been able to work out that a terrible fight between two prehistoric cats took place over 35 million years ago. And that one of them survived a savage wound. From one skull, a wealth of fascinating information has been revealed!

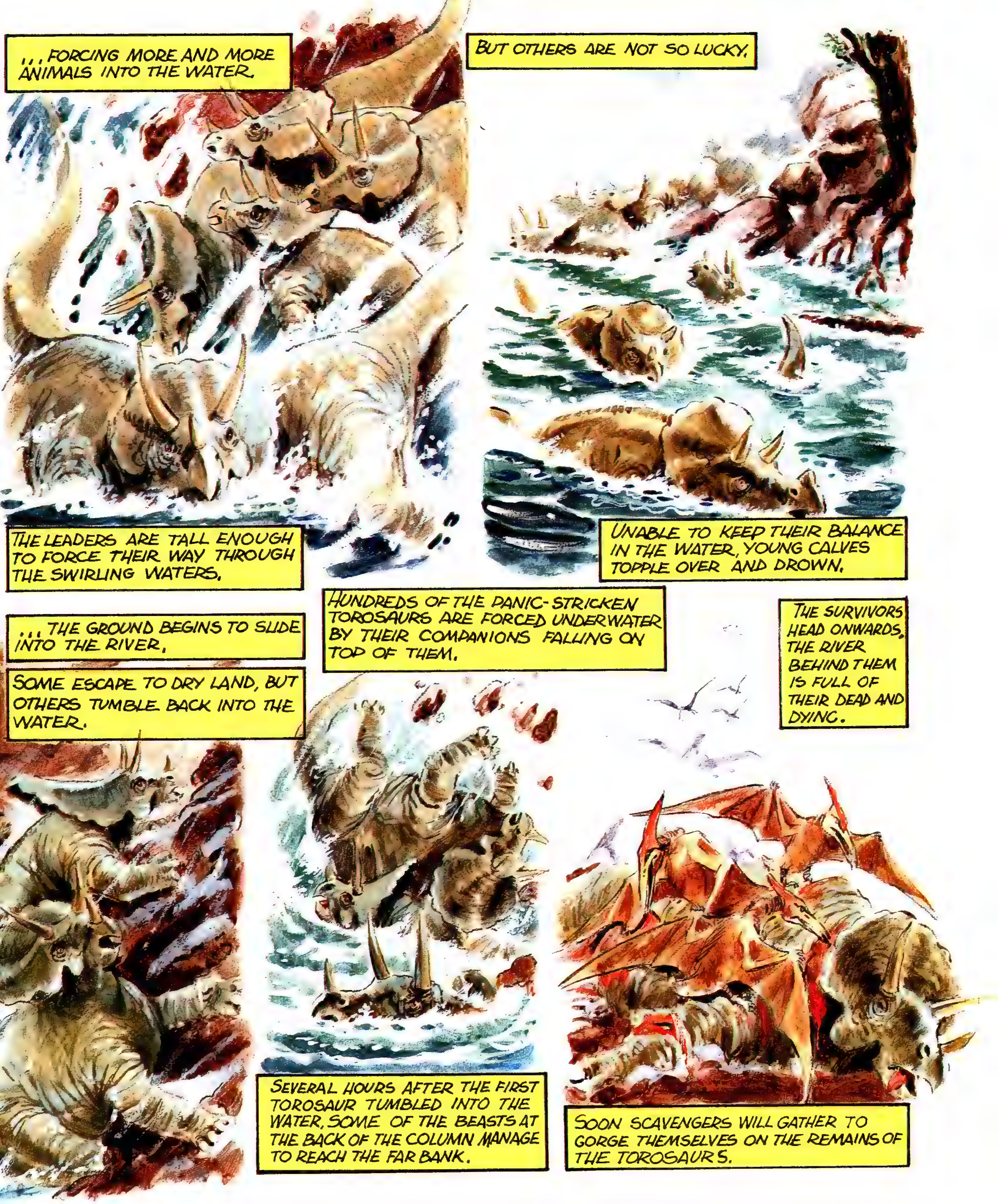


These leopards (above) are only play fighting but, as they play, they are practising survival skills.



A DAY IN THE LIFE OF TOROSAURUS


NORTH AMERICA, 65 MILLION YEARS AGO, AND A HERD OF MIGRATING TOROSAURS IS ON THE MOVE...
...BUT THE RAINS HAVE TURNED A STREAM INTO A RAGING TORRENT. THE LEADERS STOP, BUT THE ANIMALS AT THE BACK OF THE HUGE COLUMN TRUNDLE ON.
THE ANIMALS AT THE BACK PUSH ON AND ON...
SO MANY OF THE HUGE ANIMALS ARE MOVING FORWARDS THAT THE TOROSAURS ON THE RIVER BANK LOSE THEIR BALANCE AND TUMBLE INTO THE ROARING WATERS BELOW.
SOME OF THE ANIMALS AT THE FRONT FIND THE STRENGTH TO FORCE THEIR WAY THROUGH THE WATER AND CLAMBER UP THE BANKS TO SAFETY.
FOR THOSE IN THE WATER, ANOTHER DANGER LOOMS.
WEAKENED BY THEIR STRUGGLE, YOUNG TOROSAURS ARE EASY PREY FOR PREDATORY CROCODILIANS.
OTHERS ARE LUCKIER, OR SO IT SEEMS. BUT AS THEY REACH THE SAFETY OF THE FAR BANK...


...FORCING MORE AND MORE ANIMALS INTO THE WATER.
BUT OTHERS ARE NOT SO LUCKY.
THE LEADERS ARE TALL ENOUGH TO FORCE THEIR WAY THROUGH THE SWIRLING WATERS.
UNABLE TO KEEP THEIR BALANCE IN THE WATER, YOUNG CALVES TOPPLE OVER AND DROWN.
...THE GROUND BEGINS TO SLIDE INTO THE RIVER.
SOME ESCAPE TO DRY LAND, BUT OTHERS TUMBLE BACK INTO THE WATER.
HUNDREDS OF THE PANIC-STRICKEN TOROSAURS ARE FORCED UNDERWATER BY THEIR COMPANIONS FALLING ON TOP OF THEM.
THE SURVIVORS HEAD ONWARDS. THE RIVER BEHIND THEM IS FULL OF THEIR DEAD AND DYING.
SEVERAL HOURS AFTER THE FIRST TOROSAUR TUMBLED INTO THE WATER, SOME OF THE BEASTS AT THE BACK OF THE COLUMN MANAGE TO REACH THE FAR BANK.
SOON SCAVENGERS WILL GATHER TO GORGE THEMSELVES ON THE REMAINS OF THE TOROSAURS.

Improve and test your knowledge with…

FACT FILE

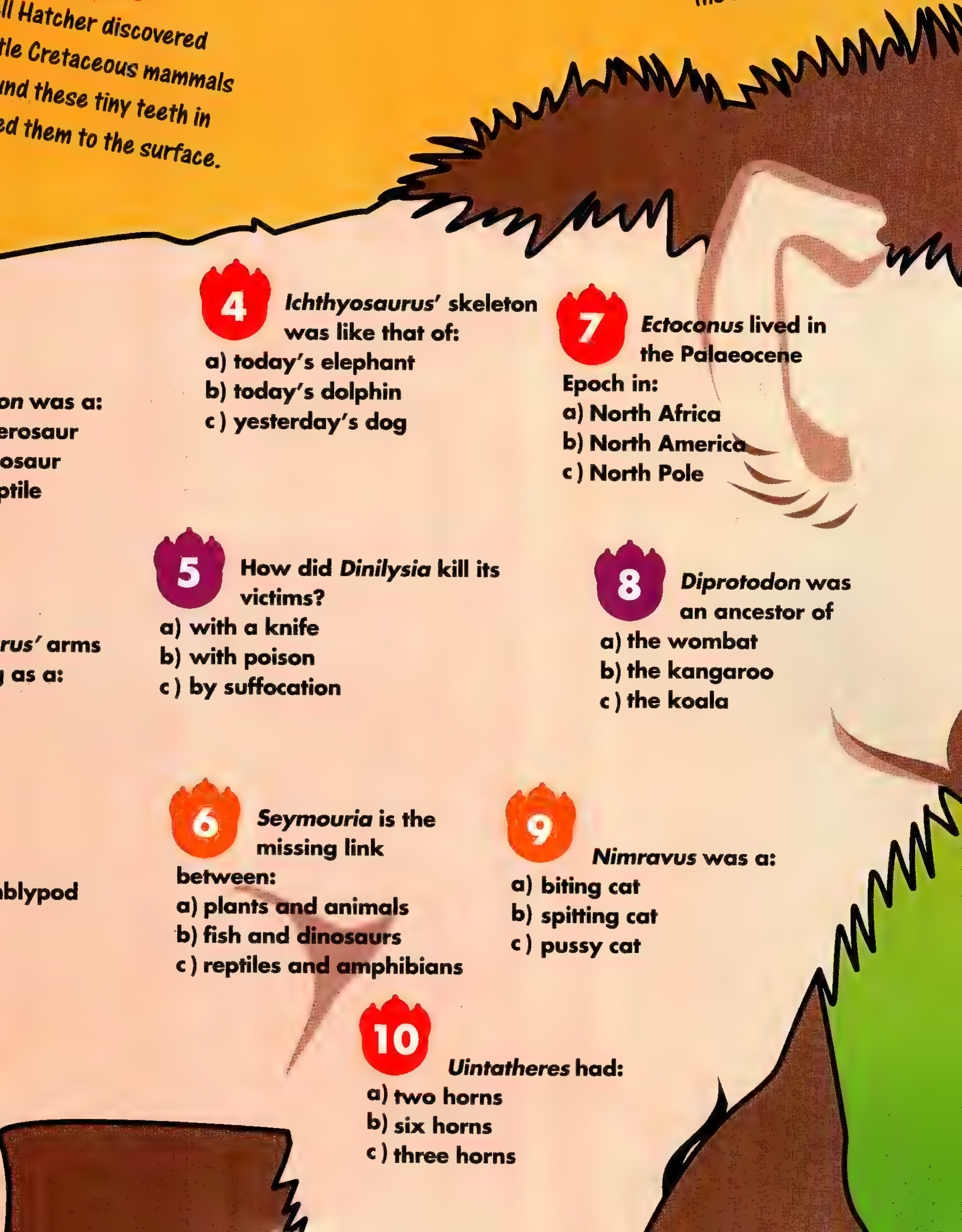
Follow the footprints to complete the quiz and get to the bottom of the question!

Using nature's workers

In the 1880s, John Bell Hatcher discovered hundreds of teeth from little Cretaceous mammals in Wyoming, USA. He found these tiny teeth in anthills. The ants had carried them to the surface.

Recognition

The Street Urban District Council in Somerset, England has an unusual crest – it is an ichthyosaur! This is because some of the most famous ichthyosaur skeletons were found in the area.



1 *Dimetrodon* was a:
a) sail-shaped pterosaur
b) long-tailed dinosaur
c) sail-backed reptile

2 *Therizinosaurus'* arms were as long as a:
a) small car
b) racing bike
c) large truck

3 What did amblypod mean?
a) big ears
b) slow feet
c) long nose

4 *Ichthyosaurus'* skeleton was like that of:
a) today's elephant
b) today's dolphin
c) yesterday's dog

5 How did *Dinilysia* kill its victims?
a) with a knife
b) with poison
c) by suffocation

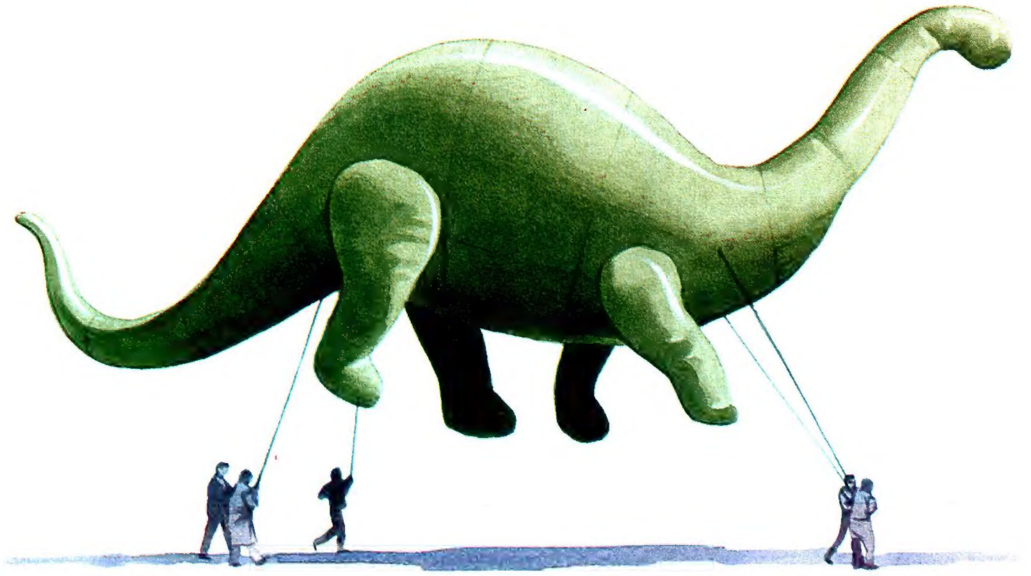
6 *Seymouria* is the missing link between:
a) plants and animals
b) fish and dinosaurs
c) reptiles and amphibians

7 *Ectoconus* lived in the Palaeocene Epoch in:
a) North Africa
b) North America
c) North Pole

8 *Diprotodon* was an ancestor of
a) the wombat
b) the kangaroo
c) the koala

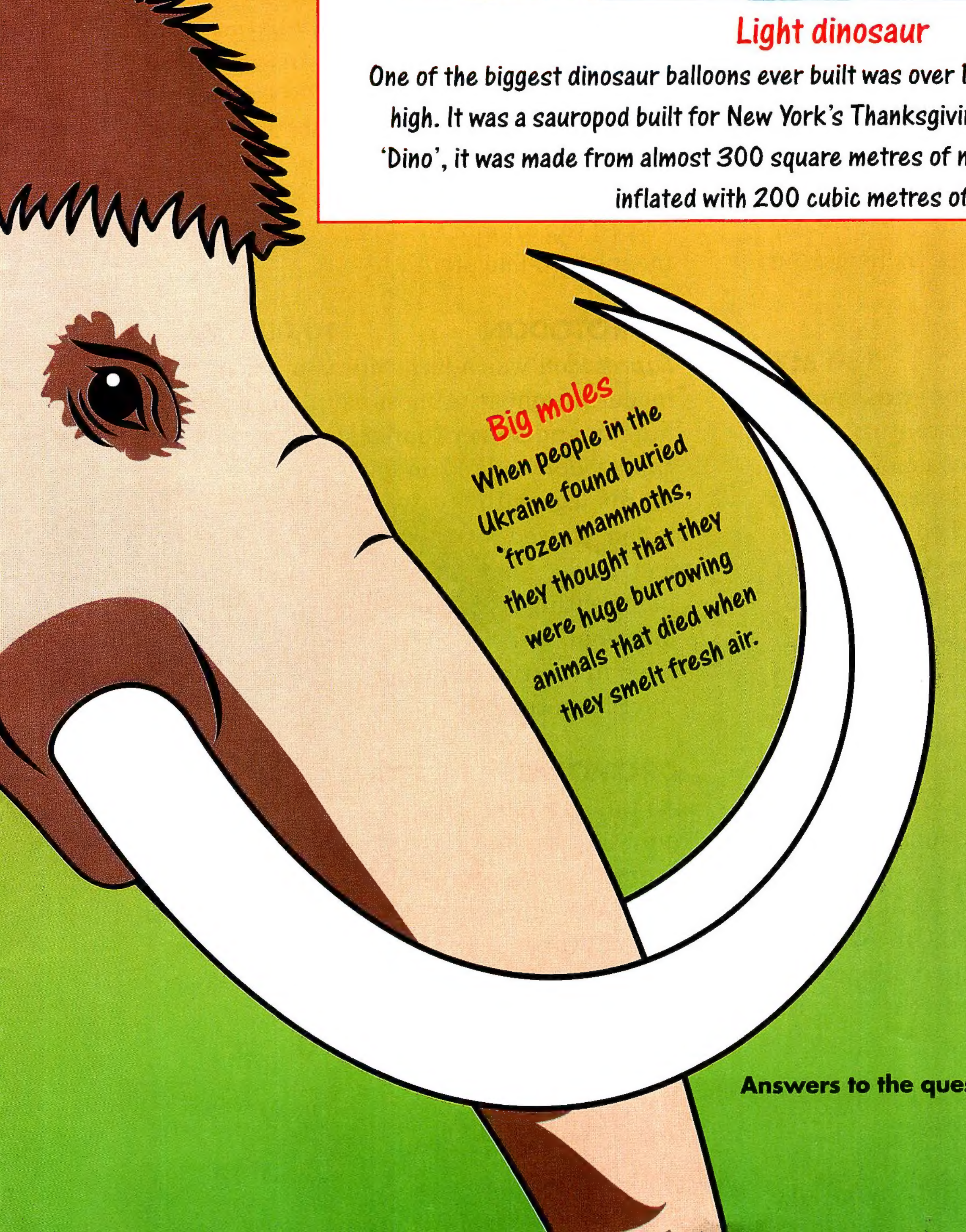
9 *Nimravus* was a:
a) biting cat
b) spitting cat
c) pussy cat

10 *Uintatheres* had:
a) two horns
b) six horns
c) three horns



Light dinosaur

One of the biggest dinosaur balloons ever built was over 18 metres long and eight metres high. It was a sauropod built for New York's Thanksgiving Day parade in 1963. Called 'Dino', it was made from almost 300 square metres of neoprene-coated nylon and was inflated with 200 cubic metres of helium.



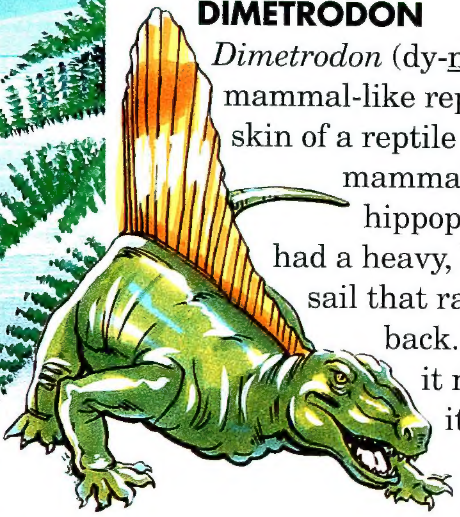
Big moles

When people in the Ukraine found buried 'frozen mammoths,' they thought that they were huge burrowing animals that died when they smelt fresh air.

Hear, hear!

The earliest fossil bats, Icaronycteris and Palaeochiropteryx, lived during the Eocene Epoch in Wyoming in the USA and in Germany. They were quite primitive, but they already had the echolocation radar system that today's bats use for hunting.

Answers to the questions on inside back cover



DIMETRODON **280 MYA**

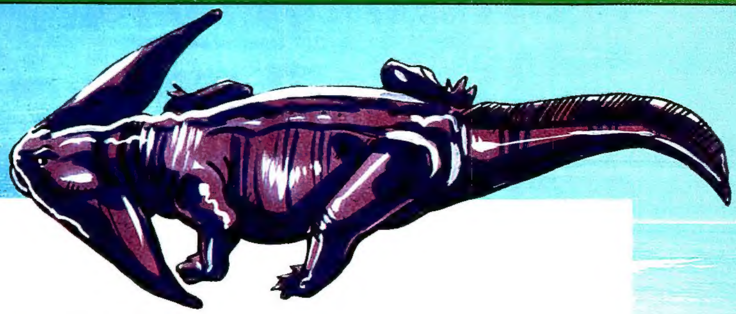
Dimetrodon (dy-met-ro-don) was a mammal-like reptile. It had the scaly skin of a reptile and teeth like a mammal. As long as a hippopotamus, *Dimetrodon* had a heavy, bulky body and a sail that ran right along its back. Experts think that it may have controlled its body temperature through its sail. Its name means 'two long teeth'. *Dimetrodon* lived in Texas and Oklahoma in the USA.

DIMORPHODON **180 MYA**

Dimorphodon (dy-morf-o-don) was found during the middle of the last century, among other fossils, on the south coast of England. It was a flying reptile, or pterosaur, with a head much bigger than its body. Some experts think *Dimorphodon*, which means 'two form tooth', ran on land and hovered above water like a seabird to catch fish.

DINILYSIA **130 MYA**

One of the oldest known snakes, *Dinilysia* (dy-nil-i-see-a), which means 'terrible destroyer', killed its prey by suffocation. It coiled its body around a victim and squeezed, like a boa constrictor does today. Although its skull was only about as long as your middle finger, it was able to swallow quite large animals. This non-poisonous snake lived in South Africa in the Cretaceous Period.

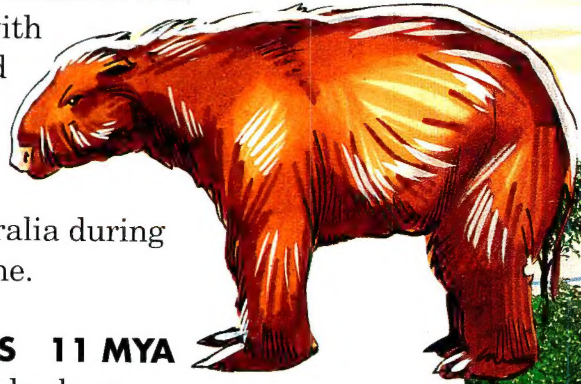


DIPLOCAULUS **270 MYA**

Diplocaulus (di-plo-kawl-us) lived in Texas, USA, in the Early Permian Period. It was an amphibian with an extraordinary head. It had a pair of bony 'wings' that stuck out on either side of its head like an arrowhead. Although its whole body was less than 1m long, *Diplocaulus'* head was about 20cm wide. Experts are not sure why its head had this strange shape, but it may have helped the animal to swim. *Diplocaulus* means 'two-fold stem'.

DIPROTODON **10,000 YA**

Diprotodon was a large ancestor of the modern wombat. Almost as tall as an adult human and longer than a small car, *Diprotodon* walked on four sturdy legs with broad, clawed feet. A plant-eating mammal, it lived in Australia during the Pleistocene.



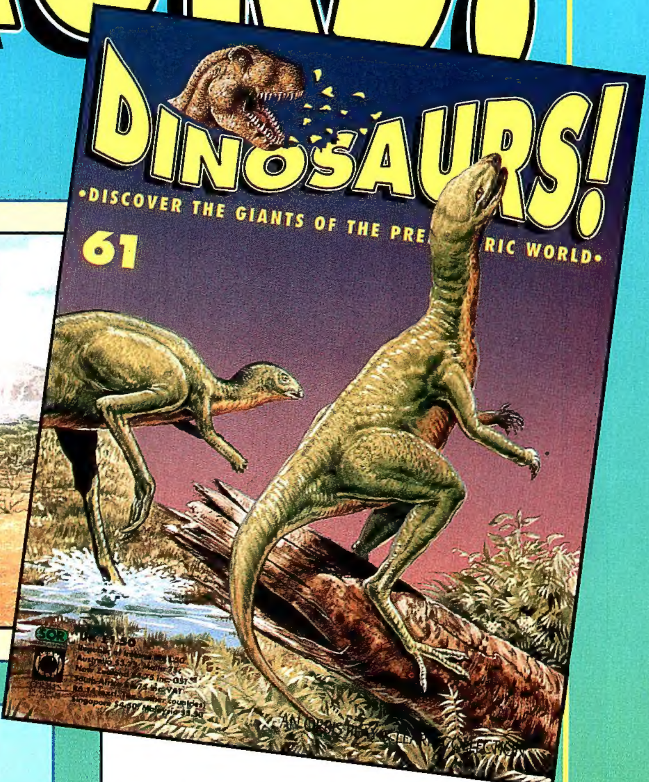
DROMORNIS **11 MYA**

As tall as a polar bear, emu-like *Dromornis* (droe-morn-is) was the largest known prehistoric bird. It lived in Australia, and some leg bones were found at Alice Springs in 1974. *Dinornis,* the giant moa, was taller, but *Dromornis* was heavier.

MYA = MILLION YEARS AGO

COMING IN PART 61 OF

DINOSAURS!



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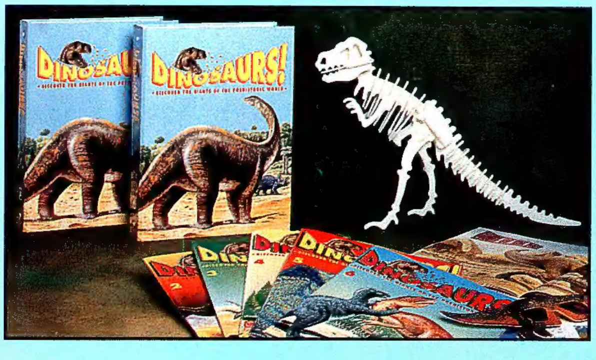

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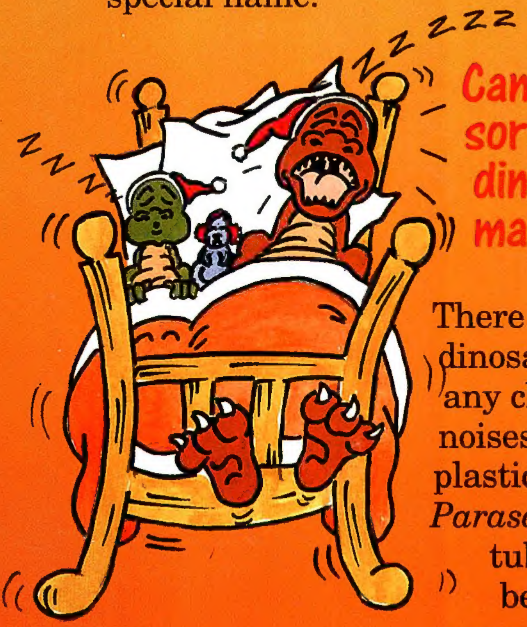
ANSWERS TO FACT FILE QUESTIONS: 1.c 2.a 3.b 4.b 5.c 6.c 7.b 8.a 9.a 10.b

Dr David Norman of Cambridge University answers your dinosaur questions

ASK THE EXPERT

Why are some reptiles called dinosaurs and others aren't?

All the dinosaurs were reptiles and, like all reptiles, they had scaly skins and laid shelled eggs. However, unlike other reptiles, dinosaurs tucked their legs beneath their bodies and could lift their bodies high off the ground. Living reptiles don't walk like this. Their legs stick out from the sides of their bodies. Because of this difference dinosaurs were given their special name.



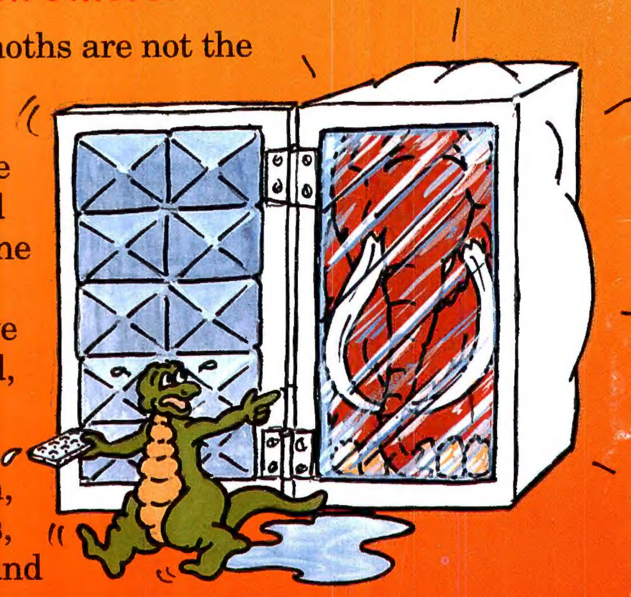
Can we tell what sort of noises dinosaurs made?

There are very few dinosaurs that give any clues about the noises they made. A plastic model of *Parasaurolophus'* tubular crest has been made by one expert. This vibrates and produces a sound in response to other noises made near it. Generally, I would imagine that big dinosaurs probably had big roars, while smaller ones just twittered.

Why have sharks not changed since the Age of the Dinosaurs?

Sharks have changed quite a lot actually, but outwardly the differences are masked by their streamlined bodies. These have remained as they were because these animals swim in water. And in water, that is simply the best shape to be.

Are mammoths the only Ice Age animals to be found frozen or have there been others?



No, mammoths are not the only creatures which have been found frozen in the ice. Woolly rhinos have been found, as well as deer, musk oxen, wolverines, squirrels and many others. And an early human hunter was found recently in the Alps.

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